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\\pww\engineer\projects\2000-2499\362-2026_cipp_sanitary_lining_citywide\drawings\street\2363-title.dwg

PLAN LEGEND

RIGHT OF WAY LINE	---
DITCH CENTERLINE	---
FENCE LINE	---X---
RETAINING WALL	---
GRAVEL LINE	---
GUARD RAIL LINE	---
RAILROAD TRACK LINE	
ROAD CENTERLINE	---
TREE LINE	~~~~~
STREAM LINE	~~~~~
WETLAND LINE	---
EX SANITARY LINE	--->>---
PR SANITARY LINE	---
AB SANITARY LINE	---AB-SAN---
EX FORCEMAIN LINE	---FM>>---
PR FORCEMAIN LINE	---
AB FORCEMAIN LINE	---AB-FM---
EX STORM LINE	--->---
PR STORM LINE	---
AB STORM LINE	---AB-STRM---
EX WATER LINE	---W---
PR WATER LINE	---
AB WATER LINE	---AB-W---
EX GAS LINE	---GAS---
PR GAS LINE	---
AB GAS LINE	---3" PE GAS---
EX STEAM LINE	---STEAM---
AB STEAM LINE	---AB-STEAM---
UG CABLE TV LINE	---UGTV---
AB CABLE TV LINE	---AB-CATV---
UG ELECTRIC LINE	---UCE---
AB ELECTRIC LINE	---AB-ELEC---
UG FIBEROPTIC LINE	---UGFO---
AB FIBEROPTIC LINE	---AB-FO---
UG TELEPHONE LINE	---UGT---
AB TELEPHONE LINE	---AB-TELE---
OH UTILITIES	---OH---

SYMBOLS

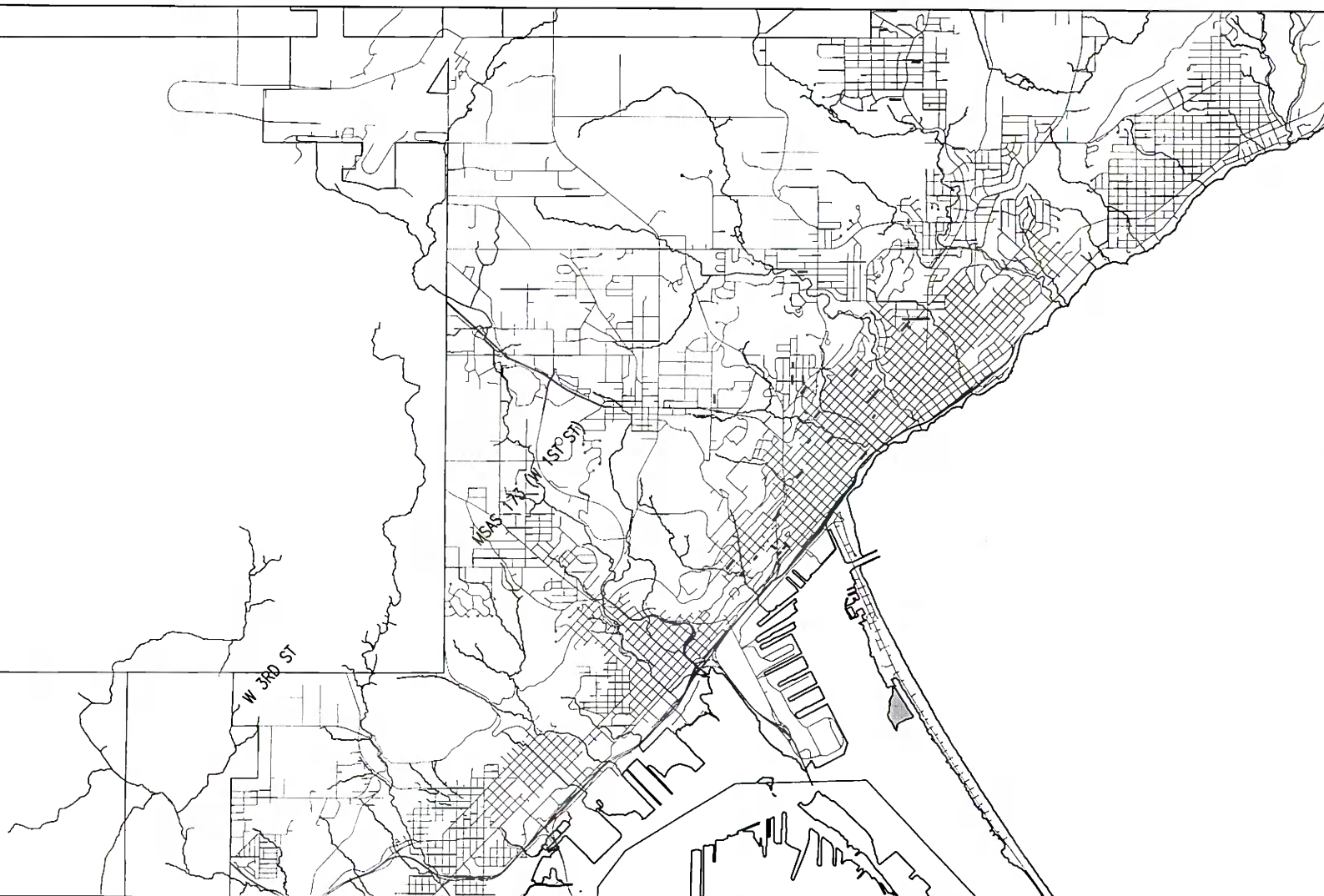
EX SANITARY MANHOLE	(SAN)
EX SANITARY CLEANOUT	(X)
EX STORM MANHOLE	(STRM)
EX STORM CATCHBASIN	(Hatched)
EX. WATER MANHOLE	(W)
EX. WATER VALVE	(WV)
EX. WATER HYDRANT	(Hydrant)
EX. WATER SHUTOFF	(WS)
EX. WATER & GAS MH	(W&G)
EX. GAS MANHOLE	(GAS)
EX. GAS VALVE	(GV)
EX. GAS SHUTOFF	(GS)
EX. STEAM MANHOLE	(STEAM)
EX. TELEPHONE MANHOLE	(T)
EX. ELECTRIC MANHOLE	(E)
EX. POWERPOLE	(PP)
EX. LIGHT POLE	(LP)
EX. ELECTRIC VAULT	(EV)
EX. ANCHOR	(A)
EX. ELECTRIC TRANSFORMER	(ET)
EX. STREET LIGHT	(SL)
EX. SIGNAL W/ STREET LIGHT	(SSL)
EX. HANDHOLE	(H.H.)
EX. HANDHOLE	(H.H.)
EX. TELEPHONE PEDESTAL	(TP)
EX. WELL	(W)
BENCHMARK	(BM)
FOUND CI MONUMENT	(FCM)
EX. SIGN	(S)
CONTROL POINT	(CP)
EX DECIDUOUS TREE	(DT)
EX CONIFEROUS TREE	(CT)
EX. PARKING METER	(PM)
EX. SOIL BORING	(SB)

CITY OF DULUTH

DEPARTMENT OF PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

CONSTRUCTION PLANS FOR:

2026 SANITARY SEWR CIPP LINING PROJECT



BASIS OF DATUM

- HORIZONTAL DATUM IS SAINT LOUIS COUNTY TRANSVERSE MERCATOR 1996 (SLCTM_96)
- VERTICAL DATUM IS NAVD 88 GEOID18 USING VERTICAL CONTROL MONUMENT "XXXXX" (EL=XXX.XXX').

PLAN REVISIONS		
DATE	SHEET NO.	APPROVER

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".



GOVERNING SPECIFICATIONS

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. AVAILABLE AT: <http://www.dot.state.mn.us/pre-letting/spec/index.html>

THE 2026 EDITION OF THE CITY OF DULUTH PUBLIC WORKS AND UTILITIES DEPARTMENT CONSTRUCTION STANDARDS AND SUPPLEMENTS OR ADDENDUMS SHALL APPLY. AVAILABLE AT: <http://www.duluthmn.gov/engineering/standard-construction-specifications/>

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST MNUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

INDEX

SHEET NO	DESCRIPTION
1	TITLE
2	CITY OVERVIEW
3	STATEMENT OF ESTIMATED QUANTITIES
4	CHART-A
5-8	DETAILS
9-39	PLAN

---THIS PLAN CONTAINS 39 SHEETS---

1 REVISION 06/18/2026

DESIGN TEAM: PMR

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

TIM SANDERS

PROJECT ENGINEER (TYPED OR PRINTED NAME)

Tim Sanders 4-21-26 50401 REG NO
 PROJECT ENGINEER DATE LIC. NO.

CITY APPROVAL

David E. [Signature] 4/24/26
 APPROVED CHIEF ENGINEER OF TRANSPORTATION DATE

Howard [Signature] 4-22-2026
 APPROVED CHIEF ENGINEER OF UTILITIES DATE

[Signature] 4-24-26
 APPROVED CITY ENGINEER DATE



1 REVISION 06/18/2026

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Tim A. Sanders TIM SANDERS
 TYPE NAME

DATE: 04/21/2026
 LIC. NO: 50401



CITY OF DULUTH
 ENGINEERING DIVISION
 411 W. 1ST ST. STE. 211
 DULUTH, MN 55802

2026 SANITARY SEWR CIPP LINING PROJECT

CITY PROJECT NO.: 2363 STATE AID PROJECT NO.: -

DRAWN BY: PMR
 CITY OVERVIEW
 SHEET NO. 2 OF 39

CHART A

PROJECT AREA	PAGE NUMBER	BASIN	PIPE ID NUMBER	U.S. M.H.	U.S. M.H. DEPTH	D.S. M.H.	D.S. M.H. DEPTH	SLOPE (% 2 digit)	LENGTH (FT)	DIAMETER (IN)	MATERIAL	CIPP 6" (FT)	CIPP 8" (FT)	CIPP 10" (FT)	CIPP 12" (FT)	8" END SEAL	12" END SEAL	REMOTE CUT SERVICE	STREET	CROSS STREET 1	CROSS STREET 2	NOTES
CW	9	26	SL0210077	SA0210013	647.83	SD0210012	635.23	2.71%	465.5	8"	VCP		465.5					8	South 69th Ave West	Sherburne St.	Redruth St.	Not Root List
CW	10	8	SL0530034	SA0530119	1041.60	SA0530118	1034.60	2.34%	298.7	8"	VCP		298.7					11	Garden St.	Cottage St.	Snelling Ave.	Lineable, Root balls in laterals,
CW	10	8	SL0530035	SA0530118	1034.60	SA0530117	1033.55	0.95%	110.6	8"	VCP		110.6					3	Garden St.	Cottage St.	Snelling Ave.	Lineable, Heavy Roots
CW	10	8	SL0530036	SA0530117	1033.55	SA0530116	1031.56	0.77%	260.0	8"	VCP		260.0					UNK	Garden St.	Cottage St.	Snelling Ave.	
CW	10 \ 11	8	SL0530037	SA0530116	1031.56	SA0530115	1023.10	3.07%	276.0	8"	VCP		276.0					3	Garden St.	Cottage St.	East 8th St.	Lineable, Root balls in laterals, Material Change, Heavy Roots.
CW	11	8	SL0530038	SA0530115	1023.10	SA0530114	1013.10	6.99%	143.1	8"	VCP		143.1					3	Garden St.	Cottage St.	East 8th St.	Lineable, Heavy Roots, Material Changes, Sag at end of run at MH.
CW	12	8	SL0530040	SA0530082	1029.60	SA 530081	1028.10	0.79%	189.5	8"	VCP		189.5					3	East 9th St	Garden St.	N. 20th Ave E.	Old Video
CW	12	8	SL0530041	SA0530083	1033.60	SA0530081	1028.10	1.52%	360.8	8"	VCP		360.8					8	East 9th St	N. 19th ave E.	N. 20th Ave E.	Lineable, roots in laterals. Medium roots. Material changes. Heavy roots near the end.
CW	12	8	SL0530042	SA0530081	1028.10	SA0530077	1020.10	3.90%	205.3	8"	VCP		205.3					0	N. 20th Ave E	E. 9th St.	E. 8th St.	Lineable, Light roots.
CW	13	10	SL0810013	SA0810013	1121.04	SA0810014	1120.75	0.30%	97.7	8"	VCP		97.7					0	W. Arrowhead Rd.	Woodhaven Ln.		Lineable, Longitudinal Cracks
CW	14	10	SL0810035	SA0810035	1111.10	SA0810036	1098.60	2.79%	448.7	8"	VCP		448.7					3	Gold St.	Oakland Cir.	Midway Ave.	Lineable, Multiple material changes. Offset joints
CW	15	10	SL0850036	SA0850038	NA	SA0850039	NA	NA	101.3	8"	VCP		101.3					2	Carlisle Ave	Roslyn Ave		Lineable, Heavy Roots, Root balls in Laterals
CW	15	10	SL0850037	SA0850039	1175.88	SA0850040	1171.45	1.27%	349.0	8"	VCP		349.0					5	Carlisle Ave	Roslyn Ave		
CW	15	10	SL0850038	SA0850040	1171.45	SA0850041	1160.75	5.26%	203.5	8"	VCP		203.5					3	Carlisle Ave	Roslyn Ave	Woodland Ave.	
CW	16	10	SL0850086	SA0850032	NA	SW0850009	NA	NA	24.0	8"	VCP		24.0					0	Columbus Ave	W. St. Andrews. St		Outside drop.
CW	17	11	SL0910026	SA0910022	1282.45	SA0910023	1267.36	4.23%	356.6	8"	VCP		356.6					4	Northfield St.	Woodland Ave		Lineable, Fractured pipes @ 100', Root balls blocking laterals, multiple.
CW	17	11	SL0910027	SA0910023	1267.36	SA0910024	1246.56	6.33%	328.7	8"	VCP		328.7					3	Northfield St.	Woodland Ave		Fractured pipes @ 100', Root balls blocking laterals, multiple. Large Sag at 265'. Hole in main.
CW	18	11	SL0960059	SA0960059	1373.92	SA0960060	1345.01	8.80%	328.5	8"	VCP		328.5					9	E. Owatonna St.	Allendale Ave.	Woodland Ave.	Lineable, Heavy Roots, Root balls in Laterals
CW	18	11	SL0960072	SA0960069	1385.15	SA0960070	1367.60	6.71%	261.5	8"	VCP		261.5					3	Allendale Ave.	Owatonna St.	E. Winona St.	Lineable, Multiple Material Changes
CW	19	11	SL100051	SA1000044	1338.04	SA1000046	1337.86	0.11%	160.4	8"	VCP		160.4					2	Farley Ln.	Colman Ave.		Lineable, Heavy Roots, Sag about halfway through run.
CW	20	13	SL0470015	SA0470015	837.6	SA0470014	831.6	2.69%	222.7	8"	VCP		222.7					7	E. 6th St. Alley	E 7th St.	E 6th St.	Lineable, Root balls in laterals. Not straight pipe.
CW	21	13	SL0470070	SA0470137	728.19	SA0470136	708.13	9.40%	213.4	8"	VCP		213.4					2	E. 1st St. Alley	N 6th Ave. E	N. 7th Ave E	
CW	21	13	SL0470071	SA0470136	708.13	SA0470135	699.1	4.52%	199.7	8"	VCP		199.7					1	E. 1st St. Alley	N 6th Ave. E	N. 7th Ave E	Lineable, Leaking joints, Not straight
CW	22	13	SL0470175	SA0470169	841.6	SA0470168	831.6	2.30%	434.7	8"	VCP		434.7					10	E. 6th St.	N. 12th Ave E.	N. 13th Ave E.	May need spot repair at 42' and 270'. Heavy Roots at 100' and 250'-270'. Material Changes.
CW	22	13	SL0470176	SA0470168	831.6	SA0470167	830.6	0.55%	182.0	8"	VCP		182.0					5	E. 6th St.	N. 11th Ave E.	N. 12th Ave E.	May not be lineable without serious reconditioning.
CW	22	13	SL0470177	SA0470167	830.6	SA0470166	820.34	3.23%	317.5	8"	VCP		317.5					6	E. 6th St.	N. 11th Ave E.	N. 12th Ave E.	Lineable, some offset joints. Material Changes.
CW	23	13	SL0470213	SA0470196	757.88	SA0470195	756.7	0.62%	189.5	12"	VCP				189.5			0	E. 4th St.	N. 10th Ave E	N. 11th Ave E	Lineable, roots in laterals
CW	24	14	SL0520055	SA0520023	999.51	SA0520024	982.1	8.72%	199.7	8"	VCP		199.7					0	N.6th Ave E.	E. 11th. St		Lineable, not straight pipe. Heavy roots.
CW	25	14	SL0520076	SA0520063	958.04	SA0520062	945.1	2.77%	466.7	8"	VCP		466.7					10	E. 10th St.	N. 6th Ave E	N. 7th Ave E.	May not be lineable, multiple joints off set, multiple material changes, heavy roots.
CW	26	14	SL0520110	SD0520008	1086.33	SD0520045	1067.54	3.87%	486.0	8"	VCP		486.0					8	E. Skyline Pkwy	N. 7th Ave E.	N. 8th Ave E.	Difficult to line. Obstructions and large holes showing soil.
CW	27	14	SL0520216	SA0520182	980.6	SA0520181	967.6	2.79%	465.2	8"	VCP		465.2					12	E. 10th St.	N. 11th Ave E.	N. 12th Ave E.	Lineable with roots
CW	28	14	SL0540038	SA0540028	1245.46	SA0540034	1232.37	5.57%	234.9	8"	VCP		234.9					3	Fern Ave.	Martha St.	Plum St.	Lineable with roots
CW	29	14	SL0540040	SA0540035	1216.87	SA0540036	1193.05	7.31%	326.0	8"	VCP		326.0					4	Fern Ave.	High St.	Martha St.	Lineable with roots, change of material
CW	29	14	SL0540041	SA0540036	1193.05	SA0540037	1173.1	6.08%	328.2	8"	VCP		328.2					5	Fern Ave.	High St.	Martha St.	Lineable with roots
CW	30	14	SL0540065	SA0540062	1138.6	SA0540061	1104.6	8.75%	388.4	8"	VCP		388.4					6	N. 8th Ave E. Alley	High St.	Martha St.	Possible spot repair required at manhole SA054062
CW	31	16	SL0450114	SA0450116	890.6	SA0450118	889.6	0.55%	182.6	8"	VCP		182.6					2	W. 3rd. St. Alley	N. 12th Ave W.	N. 11th Ave W.	Lineable with roots
CW	31	16	SL0450115	SA0450117	890.03	SA0450118	889.6	0.51%	83.8	8"	VCP		83.8					0	W. 3rd. St. Alley	N. 12th Ave W.	N. 11th Ave W.	Lineable
CW	31	16	SL0450116	SA0450118	889.6	SA0450119	870.02	11.26%	173.9	8"	VCP		173.9					0	W. 3rd. St. Alley	N. 11th Ave W.	N. 12th Ave W.	Lineable
CW	32	16	SL0450169	SA0450166	929.1	SA0450169	914.6	5.73%	252.9	8"	VCP		252.9					3	W. 3rd. St. Alley	N. 10th Ave W.	N. 9th Ave. W.	Lineable with roots, change of material, not straight pipe
CW	33	16	SL0460274	SA0450180	753.1	SD0460211	721.6	8.83%	356.6	8"	VCP		356.6					4	Mesaba Ave.			No video
CW	33	16	SL0460281	SA0460220	815	SA0460218	780.6	13.44%	255.9	6"	VCP	255.9						4	N. 7th Ave W.	W. 2nd St.	W. 3rd St.	Upstream Elevation Estimate, no video
CW	33	16	SL0460282	SA0460218	780.6	SA0460214	765.7	33.79%	44.1	6"	VCP	44.1						0	N. 7th Ave W.	W. 2nd St.	W. 3rd St.	No video
CW	33	16	SL0460276	SA0460210	706.9	SA0460209	694.8	4.82%	251.0	8"	VCP		251.0					0	Mesaba Ave.	N. 6th Ave E		Not Root List, no video
CW	33	16	SL0460308	SA0460212	714.8	SA0460209	694.8	12.58%	159.0	12"	VCP				159.0			UNK	N. 6th Ave E	W. 2nd St.	W. 1st St	Not Root List, no video
CW	33	16	SL0460309	SA0460209	694.8	SA0460207	672.4	13.33%	168.0	12"	VCP				168.0			UNK	N. 6th Ave E	W. 2nd St.	W. 1st St	Not Root List, no video
CW	34	17	SL0460027	SA0460018	921.6	SA0460017	916.01	6.44%	86.8	8"	VCP		86.8					0	W. 5th St.	N. 6th Ave W	N. 5th Ave W.	Lineable with roots
CW	34	17	SL0460032	SA0460013	876.1	SA0460020	848.49	6.36%	434.3	8"	VCP		434.3					10	W. 5th St.	N 5th Ave W.	N 4th Ave W.	Lineable
CW	35	17	SL0460089	SA0460076	913.6	SA0460075	910.6	0.88%	340.0	8"	VCP		340.0					5	E. 6th St. Alley	N. Lake Ave.	N. 1st Ave E.	To be determined from contractors videos spider webs blocked view
CW	36	17	SL0510012	SA0510087	941.6	SA0520118	926.46	4.61%	328.5	8"	VCP		328.5					5	E 8th St. Alley	N. 3rd Ave E.	N. 4th Ave E.	Lineable, Material Changes, cracks
CW	37	17	SL0670053	SA0670056	1298.47	SA0670055	1268.35	9.47%	317.9	8"	VCP		317.9					5	N. Blackmon Ave.	E. Upham Rd.	E. Lucust St.	Lineable with roots
CW	37	17	SL0670067	SA0670069	1234.97	SA0670070	1220.01	4.60%	325.3	8"	VCP		325.3					0	E. Upham rd.	N. Blackmon Ave.	N. Oak Bend Dr.	Lineable, possible spot repair near SA0670070
CW	38	9	SL0750012	SA0750010	1211.16	SA0750011	1196.7	3.01%	480.7	8"	VCP		480.7					14	W. Toledo St.	Humes Ave.		Not Root List

TOTALS	CIPP 6" (FT)	CIPP 8" (FT)	CIPP 10" (FT)	CIPP 12" (FT)	8" END SEAL	12" END SEAL	RECONNECT SERVICE
	300.0	13049	0	517	UNDISTRIBUTED		204
TOTAL FOOTAGE	13565.3						

1 REVISION 06/18/2026

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Tim A. Sanders

TIM SANDERS
TYPE NAME

DATE: 04/21/2026
LIC. NO.: 50401



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

2026 SANITARY SEWR CIPP LINING PROJECT

CITY PROJECT NO.: 2363

STATE AID PROJECT NO.: -

DRAWN BY: PMR

CHART-A

SHEET NO. 4 OF 39

SCHEDULE OF ESTIMATED QUANTITIES

NOTES	LINE	SPEC. NO.	DESCRIPTION	UNITS	EST. QUANTITY
	1	2021.501	MOBILIZATION	LUMP SUM	1
1	2	2503.602	DYE TEST ACTIVE SERVICE CONNECTION	EACH	80
1	3	2503.602	REMOTE CUT AND RECONNECT SANITARY SERVICE	EACH	213
1	4	2503.602	PIPE JOINT PRESSURE TEST - SERVICE LATERAL CONNECTION	EACH	40
1	5	2503.602	CHEMICAL GROUT POINT REPAIR - SERVICE LATERAL CONNECTION	EACH	40
1	6	2503.602	PIPE JOINT PRESSURE TEST - MAINLINE PIPE JOINT	EACH	15
1	7	2503.602	CHEMICAL GROUT POINT REPAIR - MAINLINE	EACH	15
	8	2503.602	8" CIPP LINER END SEAL	EACH	40
	9	2503.602	10" CIPP LINER END SEAL	EACH	4
	10	2503.602	12" CIPP LINER END SEAL	EACH	6
1	11	2503.602	SPOT REPAIR - NON-STREET AREA (DEPTH LESS THAN 10')	EACH	7
1	12	2503.602	SPOT REPAIR - NON-STREET AREA (DEPTH 10' OR MORE)	EACH	7
1	13	2503.602	SPOT REPAIR - STREET AREA (DEPTH LESS THAN 10')	EACH	7
1	14	2503.602	SPOT REPAIR - STREET AREA (DEPTH 10' OR MORE)	EACH	7
1	15	2503.603	CLEAN & TELEWISE SEWER MAIN NOT TO BE LINED	LIN FT	500
	16	2503.03	6" CIPP MAIN LINING	LIN FT	300
	17	2503.603	8" CIPP MAIN LINING	LIN FT	13049
	18	2503.603	12" CIPP MAIN LINING	LIN FT	517
1	19	2503.603	MANHOLE LINING - VARIOUS SIZES	LIN FT	200
1	20	2503.610	HEAVY ROOT CLEANING	HR	100
	21	2563.601	TRAFFIC CONTROL	LUMP SUM	1

NOTES:

1. QUANTITY IS AN ESTIMATE. EXACT QUANTITY AND LOCATION OF WORK TO BE IDENTIFIED AFTER PRE-LINING TELEVISION INSPECTION.

1 REVISION 06/18/2026

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SIGNATURE: Tim A. Sanders

TIM SANDERS
TYPE NAME

DATE: 04/21/2026

LIC. NO: 50401



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ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
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2026 SANITARY SEWR CIPP LINING PROJECT

CITY PROJECT NO.: 2363

STATE AID PROJECT NO.: -

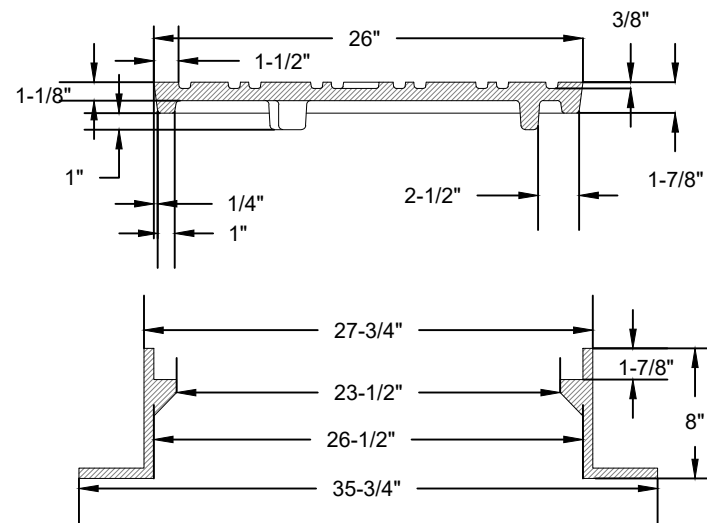
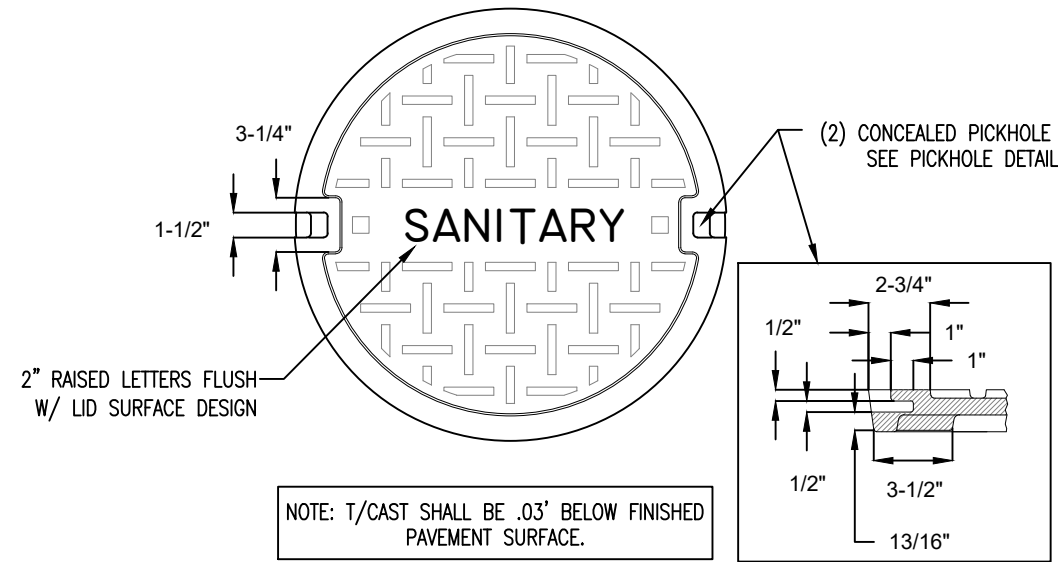
DRAWN BY: PMR

SEQ

SHEET NO. 3 OF 39

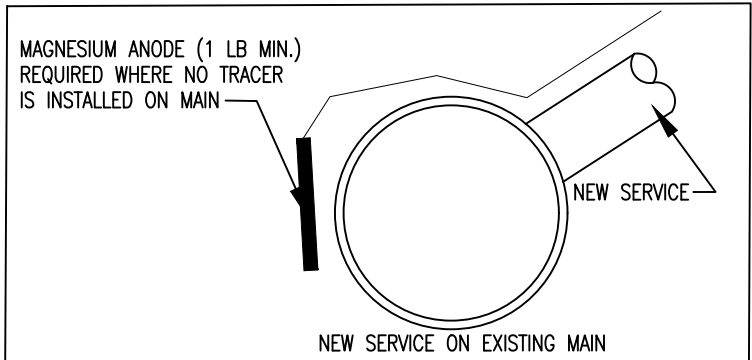
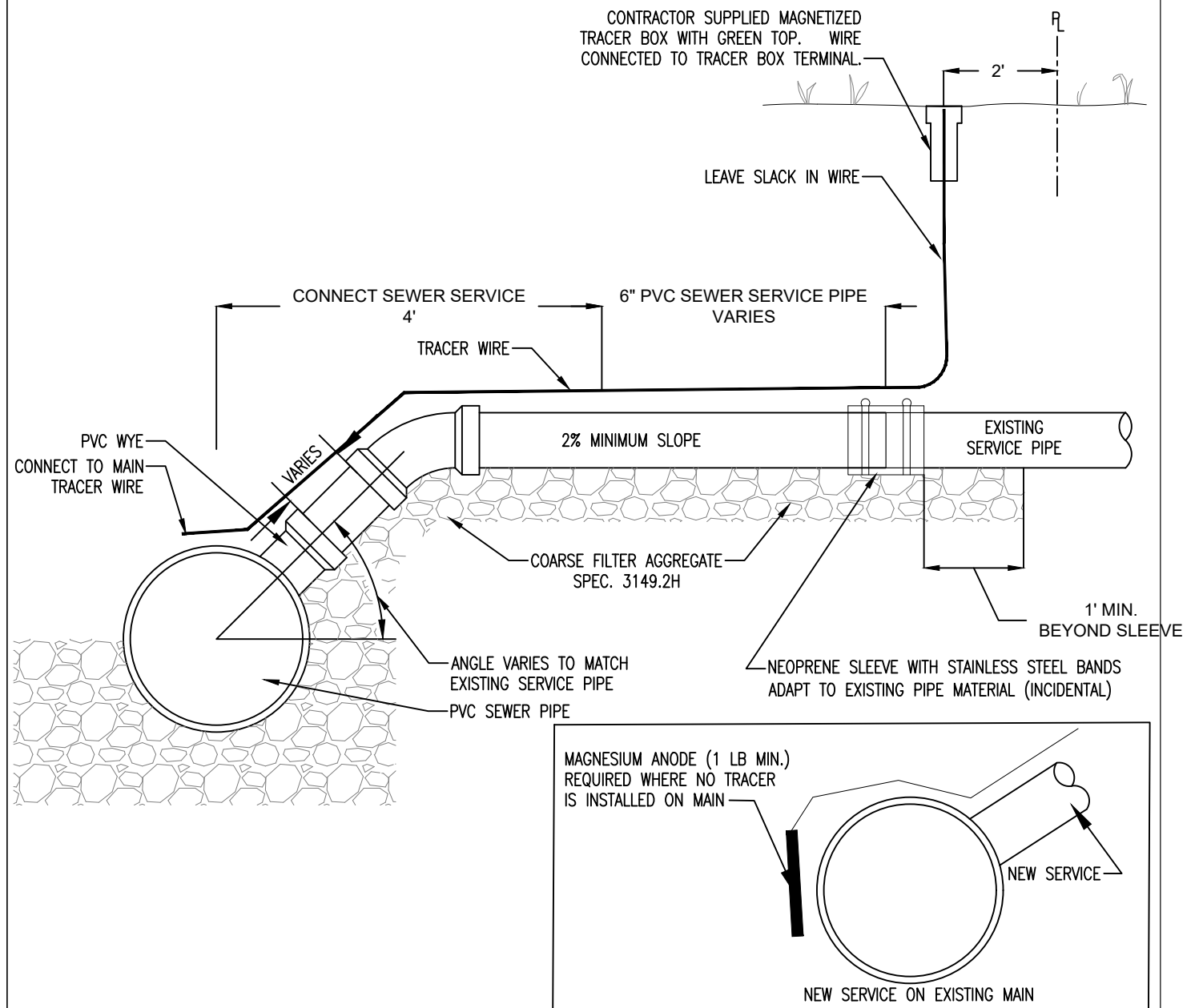
WGT. 298 LBS		MATERIAL: GRAY IRON CLASS 35B
WGT. 122 LBS	TOTAL WEIGHT 420 LBS.	SPEC.: ASTM A-48-74

NOTE: SUITABLE FOR HS25 WHEEL LOADS



SANITARY CASTING DETAIL

SAN-1



NOTES

- BID ITEM FOR PVC WYE INCLUDES FURNISHING AND INSTALLING WYE IN SEWER MAIN.
- CONNECT SEWER SERVICE INCLUDES 6" PVC SEWER SERVICE PIPE (TO 4' FROM C/L) AND ALL FITTINGS
- 6" PVC SEWER SERVICE PIPE IS INTENDED FOR THE RECONSTRUCTION OF SEWER SERVICES (WHEN FOUND TO BE IN NEED BY THE ENGINEER) COMPLETE IN PLACE FROM 4.0' BEYOND THE C/L OF THE SEWER MAIN TO A POINT DESIGNATED BY THE ENGINEER
- FOR NEW SERVICES, PIPE TO STOP AT RIGHT OF WAY
- #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED WITH SANITARY SEWER MAINS AND SERVICES. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER
- FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP.
- THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

TYPICAL SEWER SERVICE CONNECTION

SAN-2

REVISED/APPROVED 02/01/2013

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE

REVISED/APPROVED 02/19/2015

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE

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SIGNATURE: *Tim A. Sanders*

TIM SANDERS
TYPE NAME

DATE: 04/21/2026

LIC. NO: 50401



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

2026 SANITARY SEWR CIPP LINING PROJECT

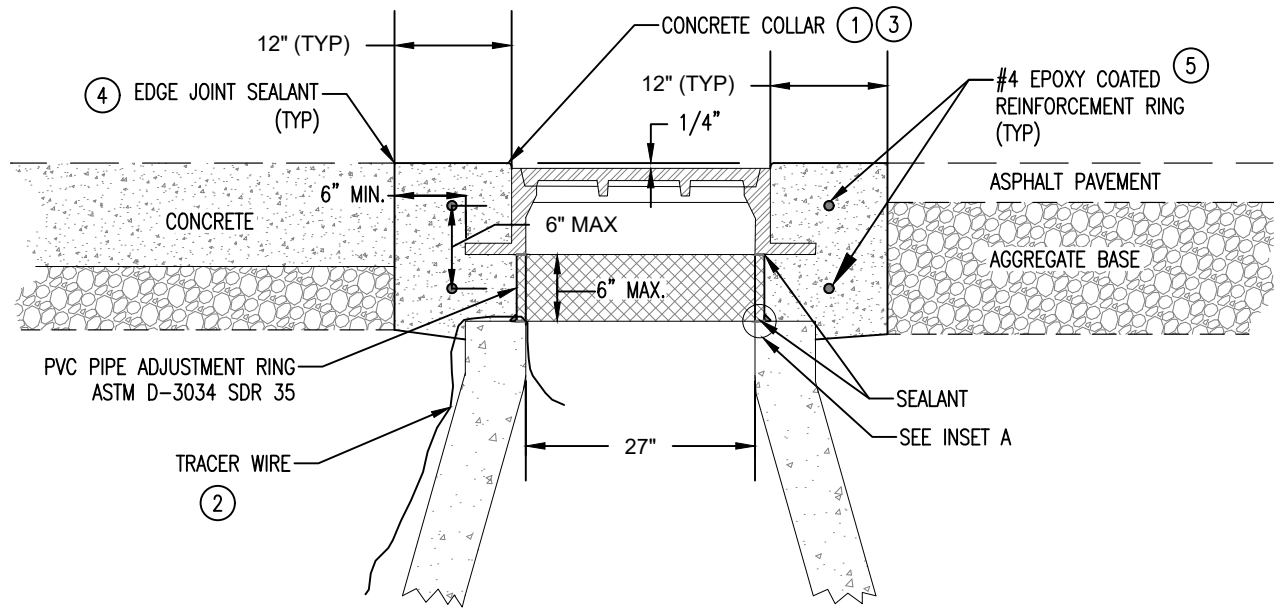
CITY PROJECT NO.: 2363

STATE AID PROJECT NO.: -

DRAWN BY: PMR

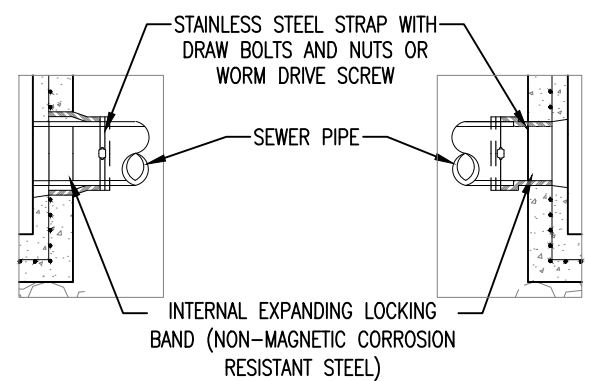
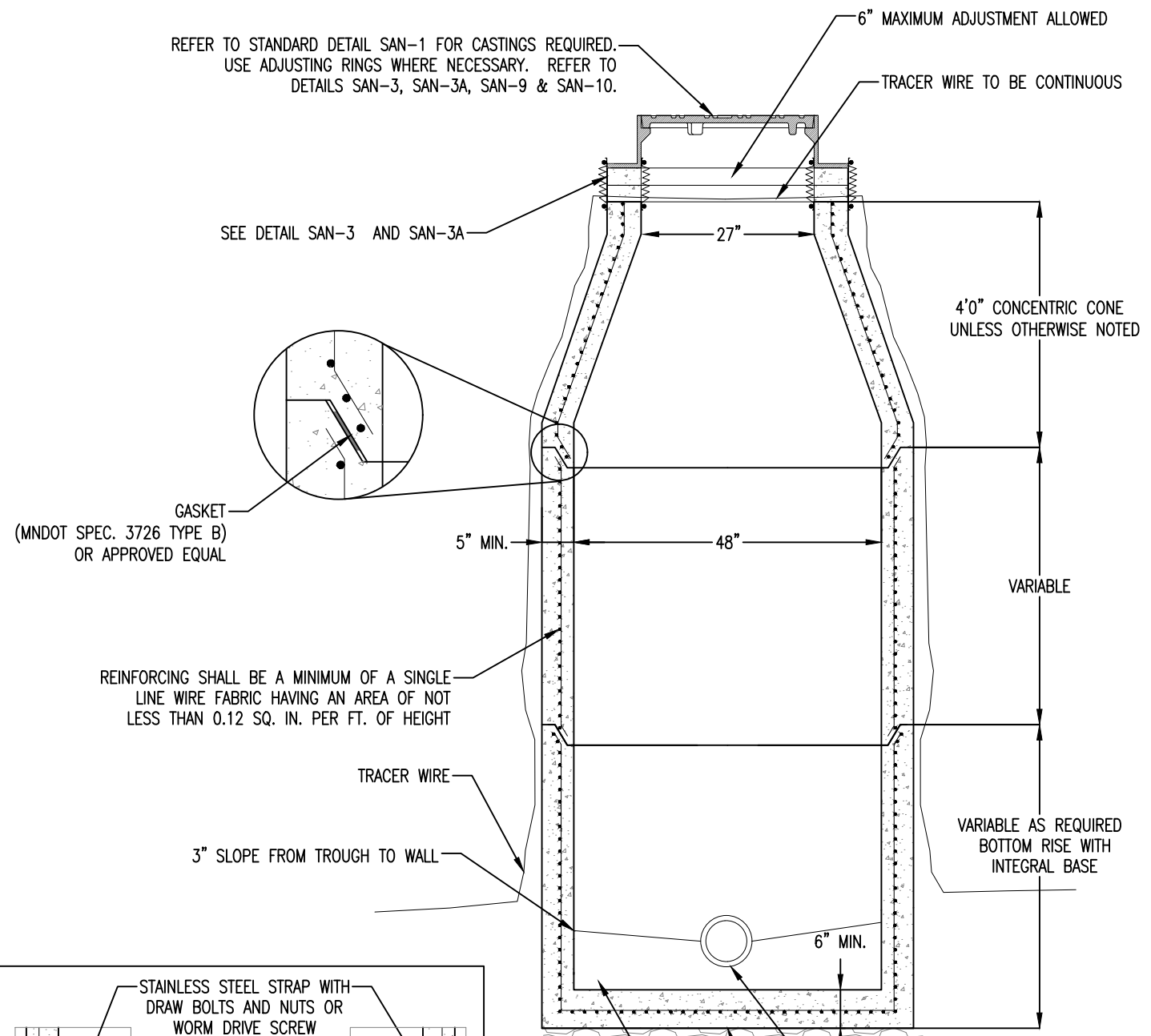
DETAILS

SHEET NO. 5 OF 39



NOTES:

- ① CONCRETE (MIX NO. 3G52) COLLAR TO ENCASE CASTING AND ADJUSTMENT RING.
- ② TRACER WIRE REQUIRED ON ALL SANITARY SEWER MAINS.
- ③ CONCRETE COLLAR SHALL BE CIRCULAR LAYOUT. PAVEMENT AND BASE SHALL BE CUT OUT WITH ROTATING CUTTING DEVICE
- ④ FINISH CONCRETE EDGE WITH 1/4" RADIUS. SEAL JOINT BETWEEN PAVEMENT AND COLLAR.
- ⑤ MAINTAIN 3.5" COVER ON REINFORCEMENT.



PIPE SLEEVE DETAIL
1. ALL PIPE SLEEVES MUST BE WATER TIGHT

NOTES

- 1. SANITARY MANHOLES SHALL NOT HAVE STEPS.
- 2. ALL SANITARY MANHOLES SHALL BE VACUUM TESTED.
- 3. ALL SANITARY MANHOLES SHALL BE WATERTIGHT. ANY OBSERVABLE WATER SEEPAGE THROUGH THE END OF THE WARRANTY PERIOD SHALL BE CAUSE TO REJECT MANHOLES.
- 4. AN INSIDE DROP IS REQUIRED PER DETAIL SAN-4 ANYTIME THE DROP IS GREATER THAN 2.0'.

CONCRETE ENCASED CASTING COLLAR FOR SANITARY MH IN ROADWAY, WALKS, & DRIVES

SAN-3A

PRECAST MECHANICAL JOINT SEWER MANHOLE

SAN-11

REVISED/APPROVED 04/05/2019

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE

REVISED/APPROVED 01/08/2016

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

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TYPE NAME

DATE: 04/21/2026

LIC. NO: 50401



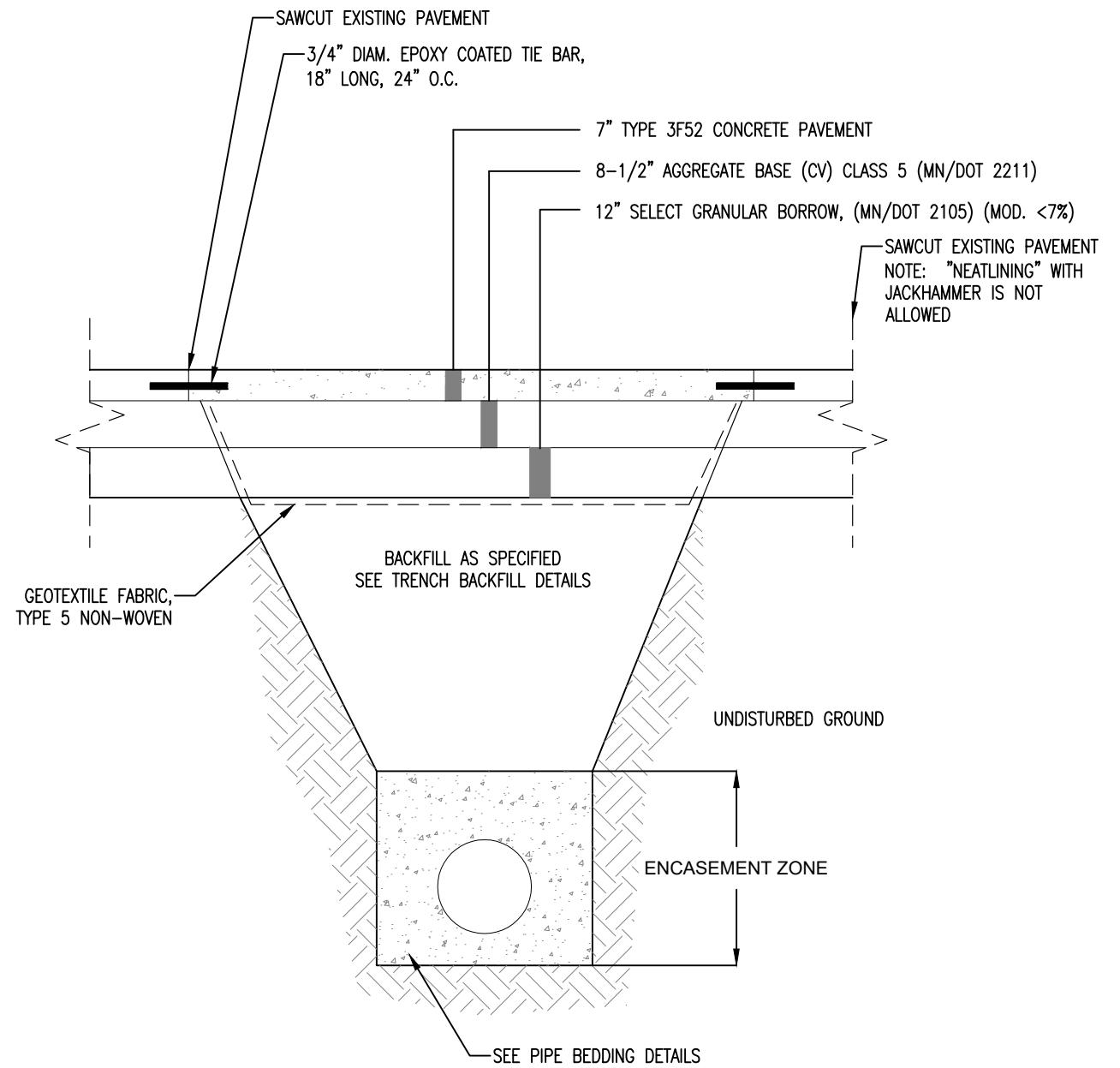
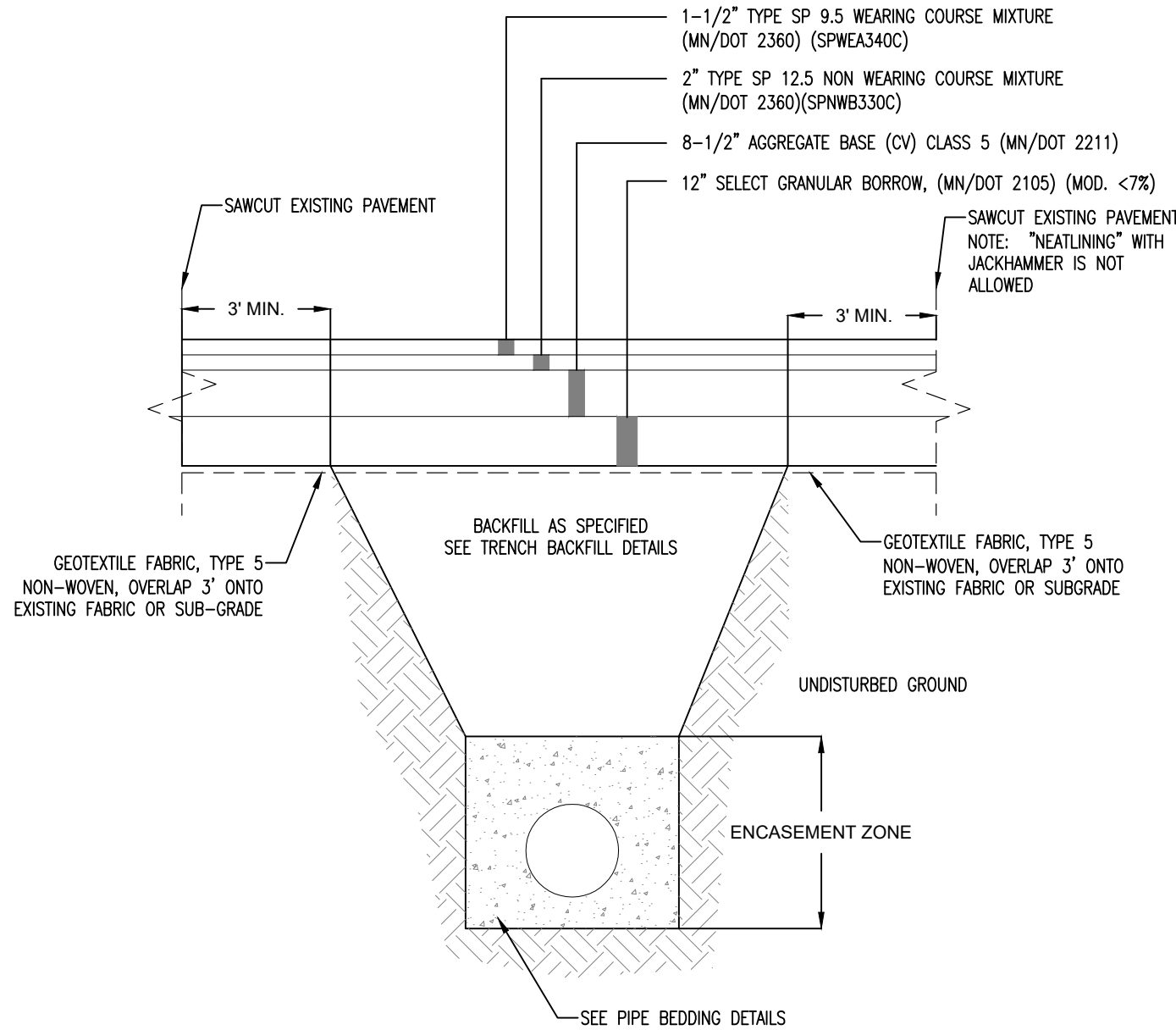
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411 W. 1ST ST. STE. 211
DULUTH, MN 55802

2026 SANITARY SEWR CIPP LINING PROJECT

CITY PROJECT NO.: 2363 STATE AID PROJECT NO.: -

DRAWN BY: PMR

DETAILS
SHEET NO. 6 OF 39



STREET RESTORATION OVER TRENCH		STR-8	CONCRETE STREET RESTORATION OVER TRENCH	
REVISED/APPROVED 04/05/2019	CITY OF DULUTH STANDARD DETAIL DEPT. OF PUBLIC WORKS AND UTILITIES	NO SCALE	CITY OF DULUTH STANDARD DETAIL DEPT. OF PUBLIC WORKS AND UTILITIES	NO SCALE

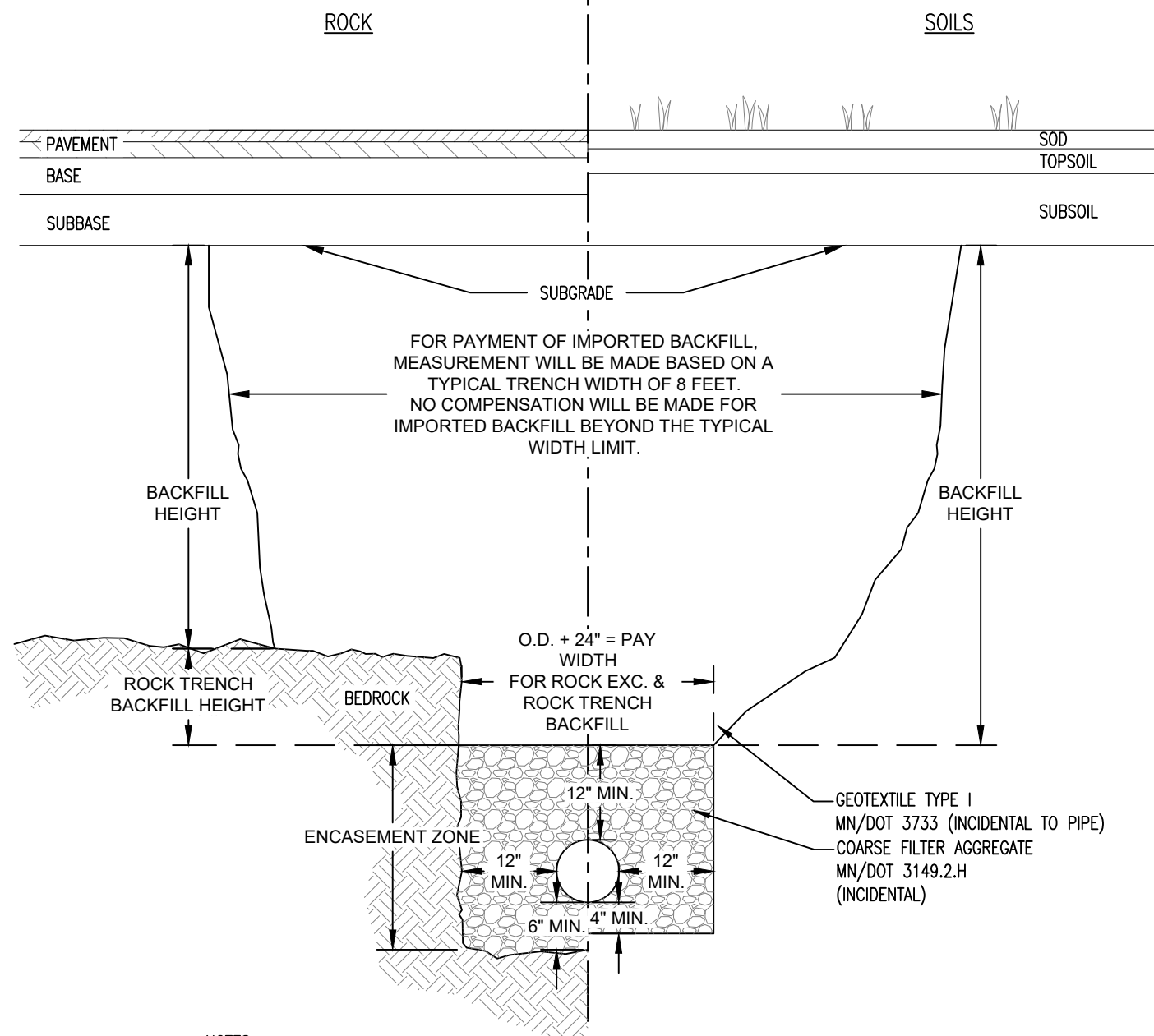
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 SIGNATURE: Tim A. Sanders
 TYPE NAME: TIM SANDERS
 DATE: 04/21/2026
 LIC. NO.: 50401



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2026 SANITARY SEWR CIPP LINING PROJECT
 CITY PROJECT NO.: 2363
 STATE AID PROJECT NO.: -

DRAWN BY: PMR
 DETAILS
 SHEET NO. 7 OF 39



NOTES:

1. EXCESS EXCAVATION MATERIAL SHALL BE DISPOSED OF OFF PROJECT R.O.W. (INCIDENTAL)
2. PAY WIDTH FOR ROCK EXCAVATION SHALL BE BASED ON OUTSIDE DIAMETER OF PIPE PLUS 24".
3. A MINIMUM OF 1 CUBIC YARD OF STRUCTURE EXCAVATION, CLASS R, WILL BE PAID FOR EVERY 10' OF PIPE WHERE ROCK REMOVAL IS REQUIRED.
4. TRENCH STABILIZATION BEDDING MATERIAL MAY BE USED IN AREAS AS DETERMINED BY THE ENGINEER.
5. ENCASEMENT ZONE MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
6. BACKFILL SHALL BE SELECT GRADING MATERIAL FOUND ON-SITE WHEN DEEMED SUITABLE BY THE ENGINEER OR AS OTHERWISE DEFINED IN THE PROJECT SPECIAL PROVISIONS. WHEN ON-SITE MATERIAL IS NOT SUITABLE AND WHEN BACKFILL MATERIAL IS NOT SPECIFIED, IMPORTED MATERIAL MEETING MN/DOT 3149.2.D.1 GRANULAR BACKFILL SHALL BE PROVIDED. USE OF NATIVE ON-SITE MATERIAL IS INCIDENTAL.
7. COMPACT BACKFILL MATERIALS TO 100% OF MAXIMUM STANDARD PROCTOR DENSITY FOR THE UPPER 3' BELOW THE SUBGRADE, AND TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY BELOW THE UPPER 3'.

PVC AND CORRUGATED POLYETHYLENE SEWER PIPE BEDDING

EX-3

REVISED/APPROVED 04/05/2019

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE

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CITY PROJECT NO.: 2363

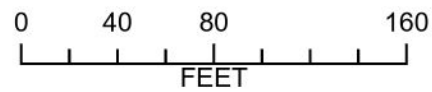
STATE AID PROJECT NO.: -

DRAWN BY: PMR

DETAILS

SHEET NO. 8 OF 39

OVERVIEW MAP

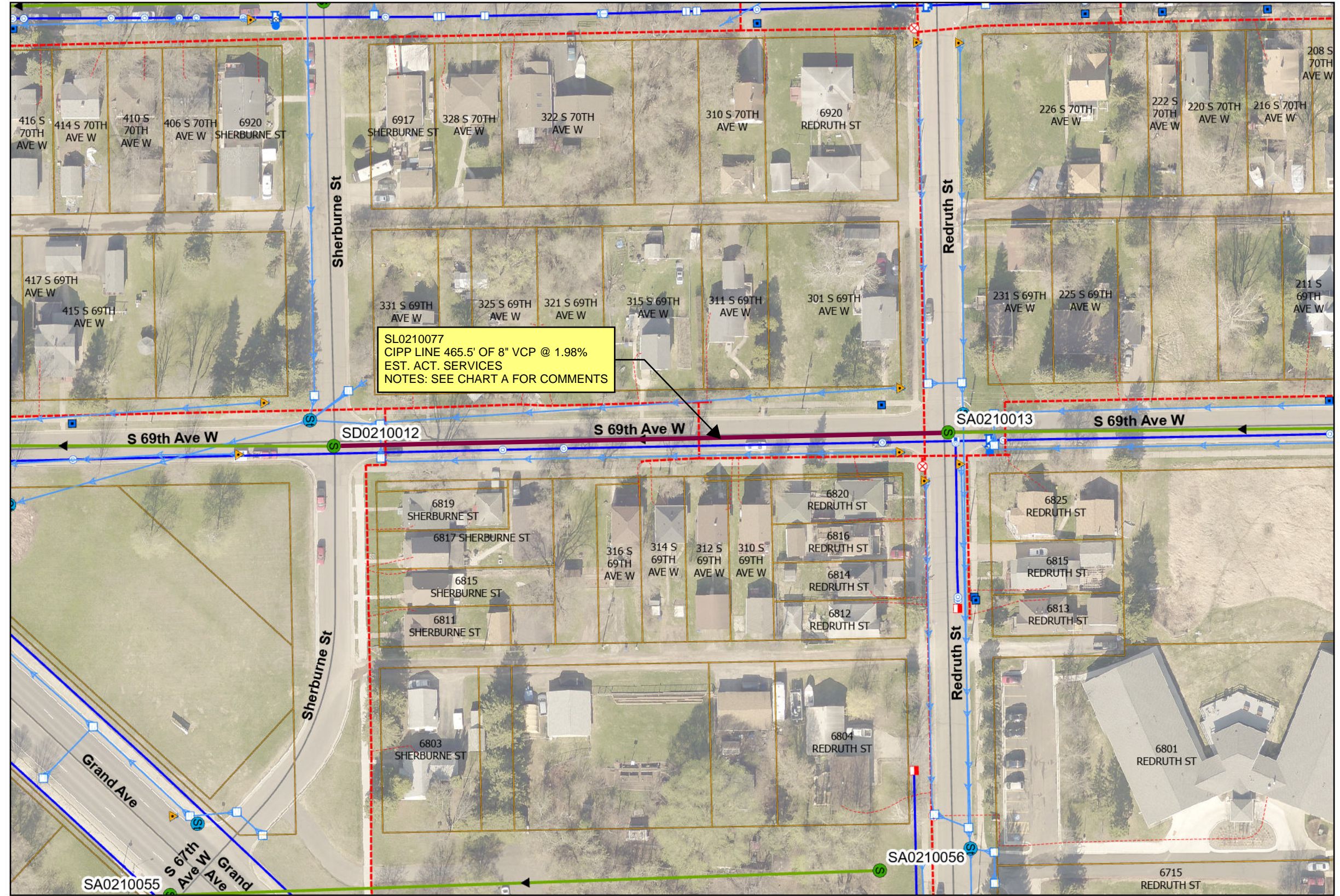


LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
- - - GAS MAIN
- WATER MAIN

▲ REVISION 06/18/2026

PLAN



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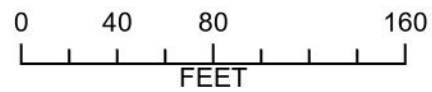


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2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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PAGE 9

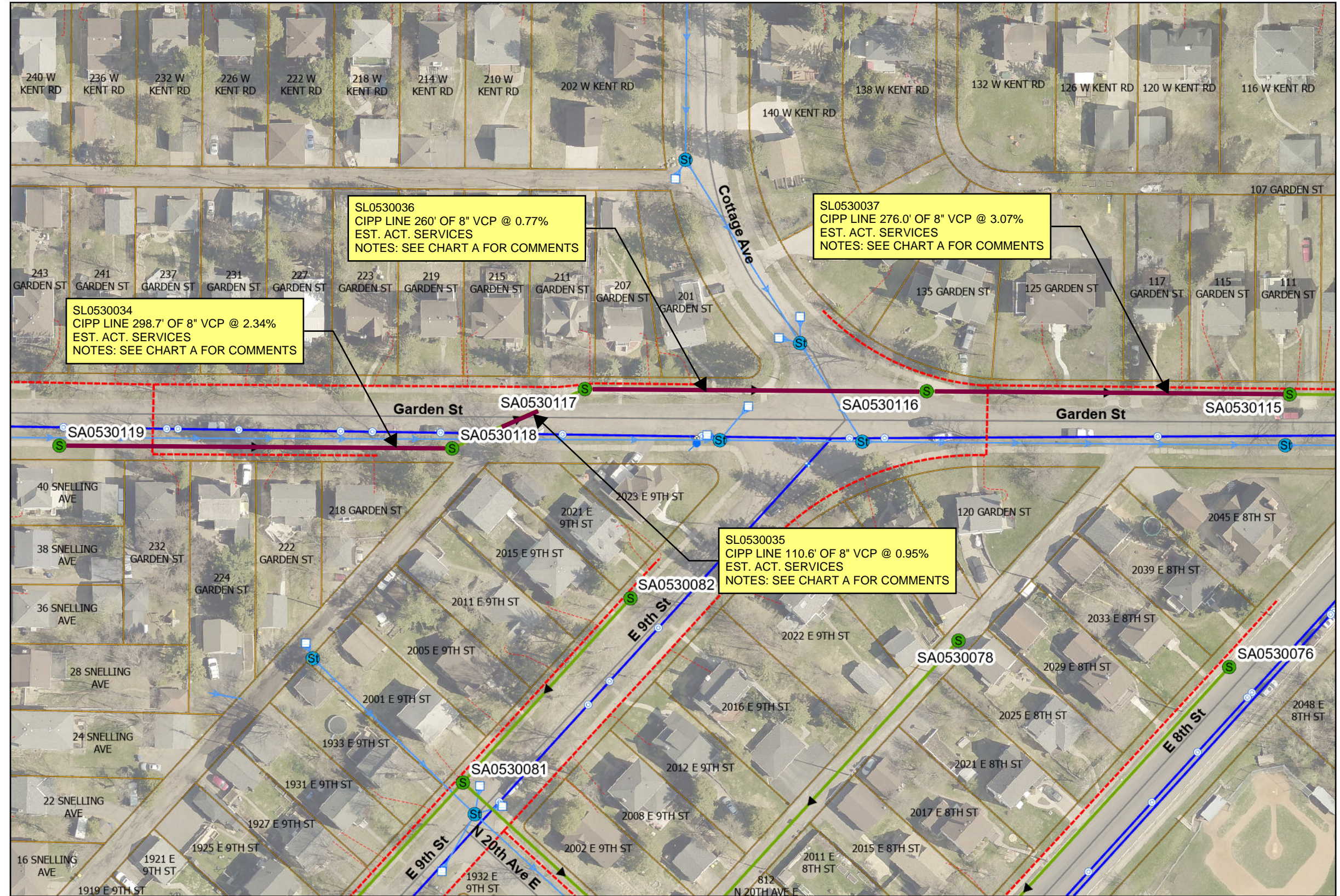
OVERVIEW MAP



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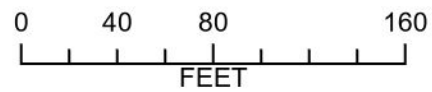


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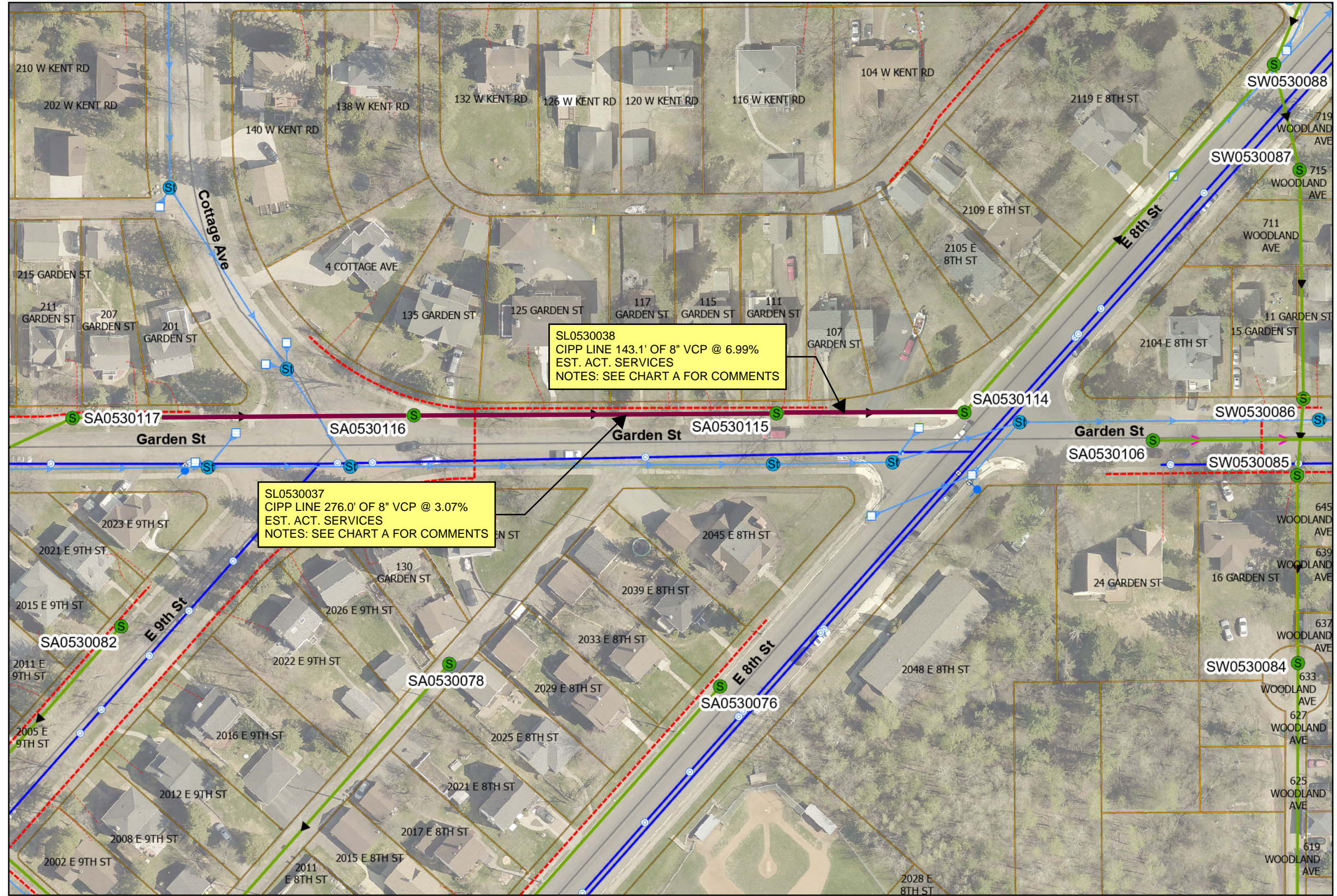
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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PAGE 10

OVERVIEW MAP



PLAN



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- Parcel W/Address
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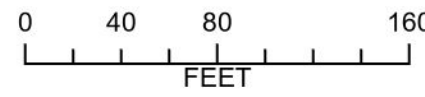
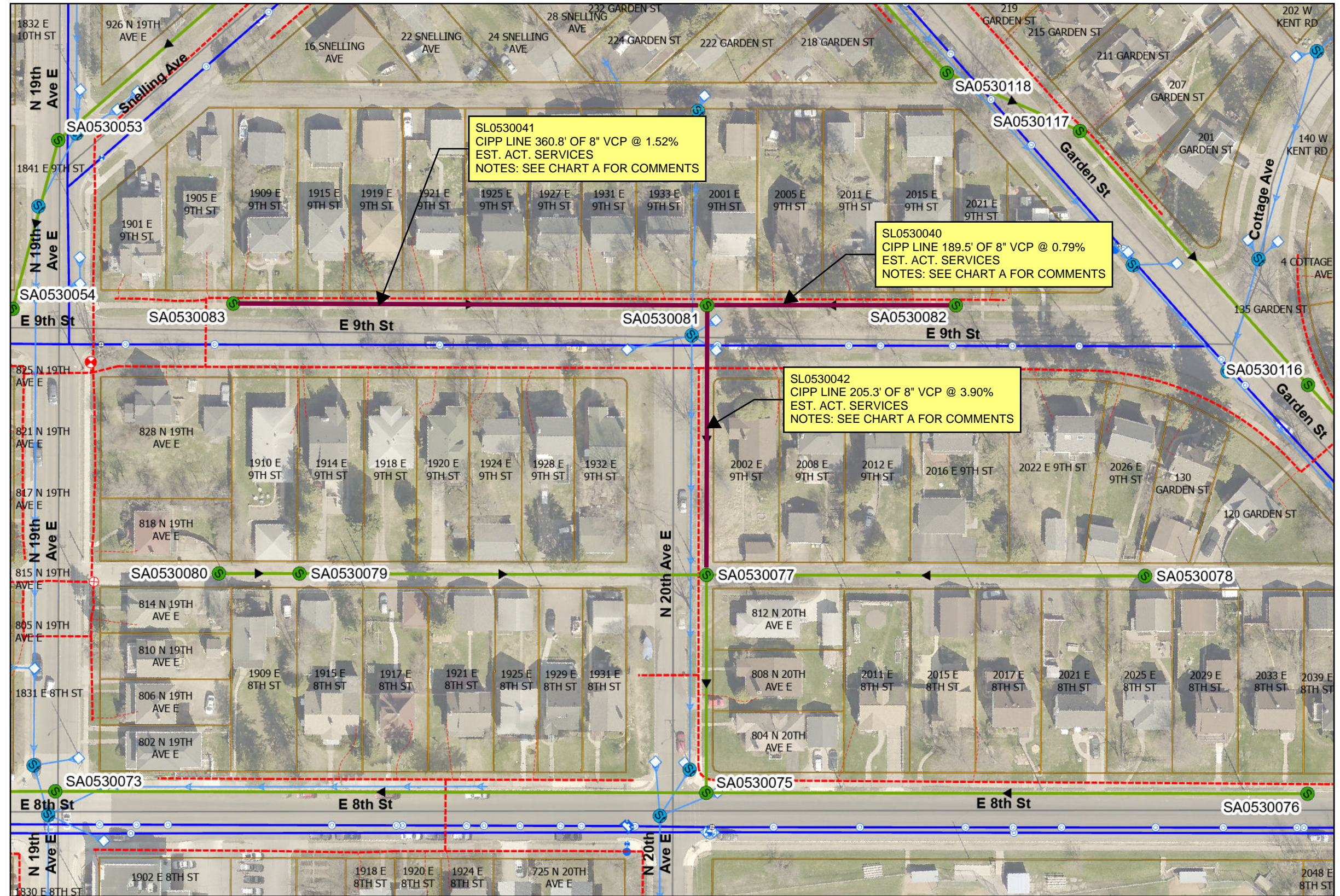
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
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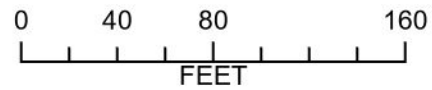


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2026 CITYWIDE SANITARY SEWER CIPP LINING
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OVERVIEW MAP

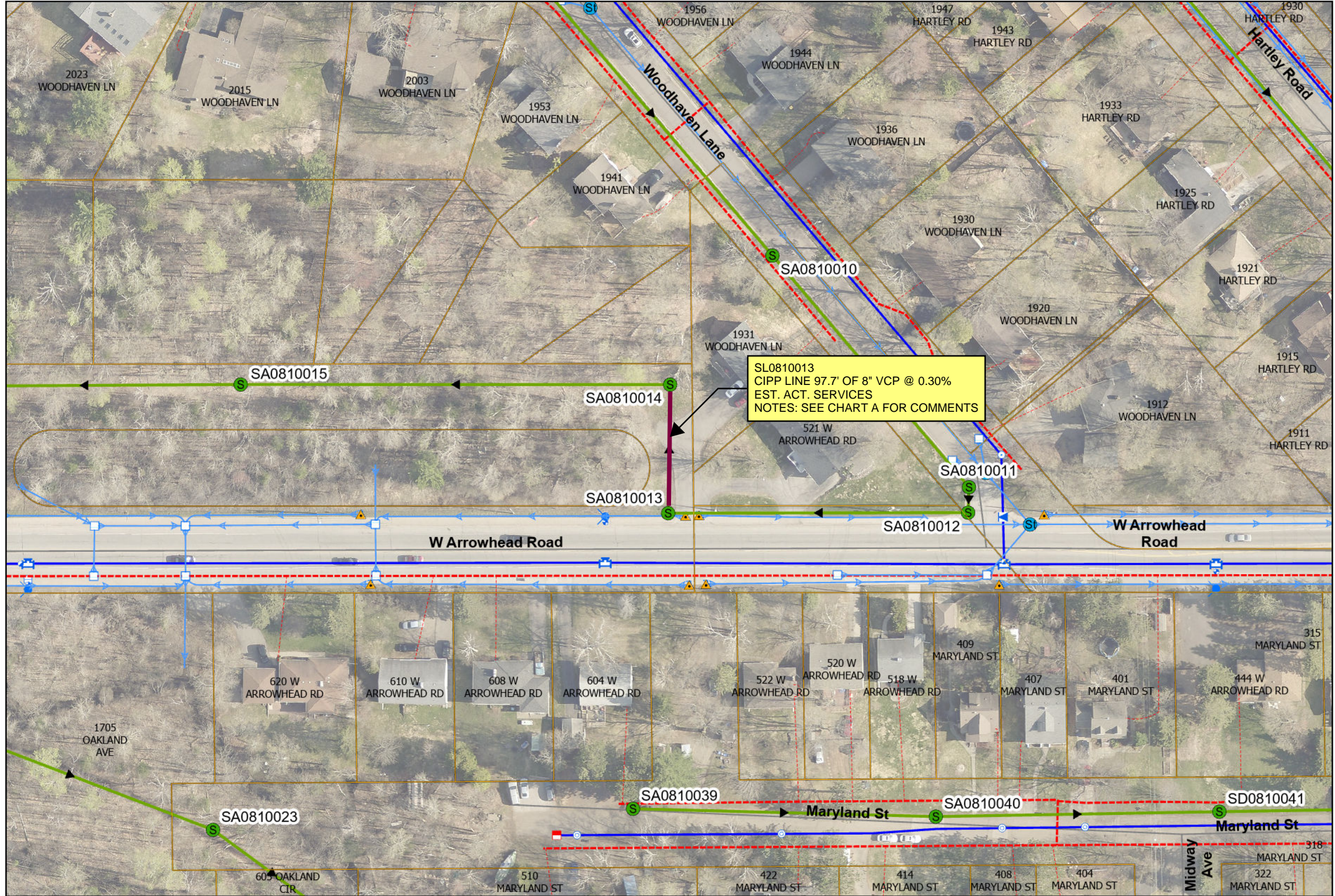


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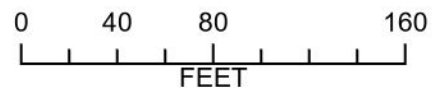


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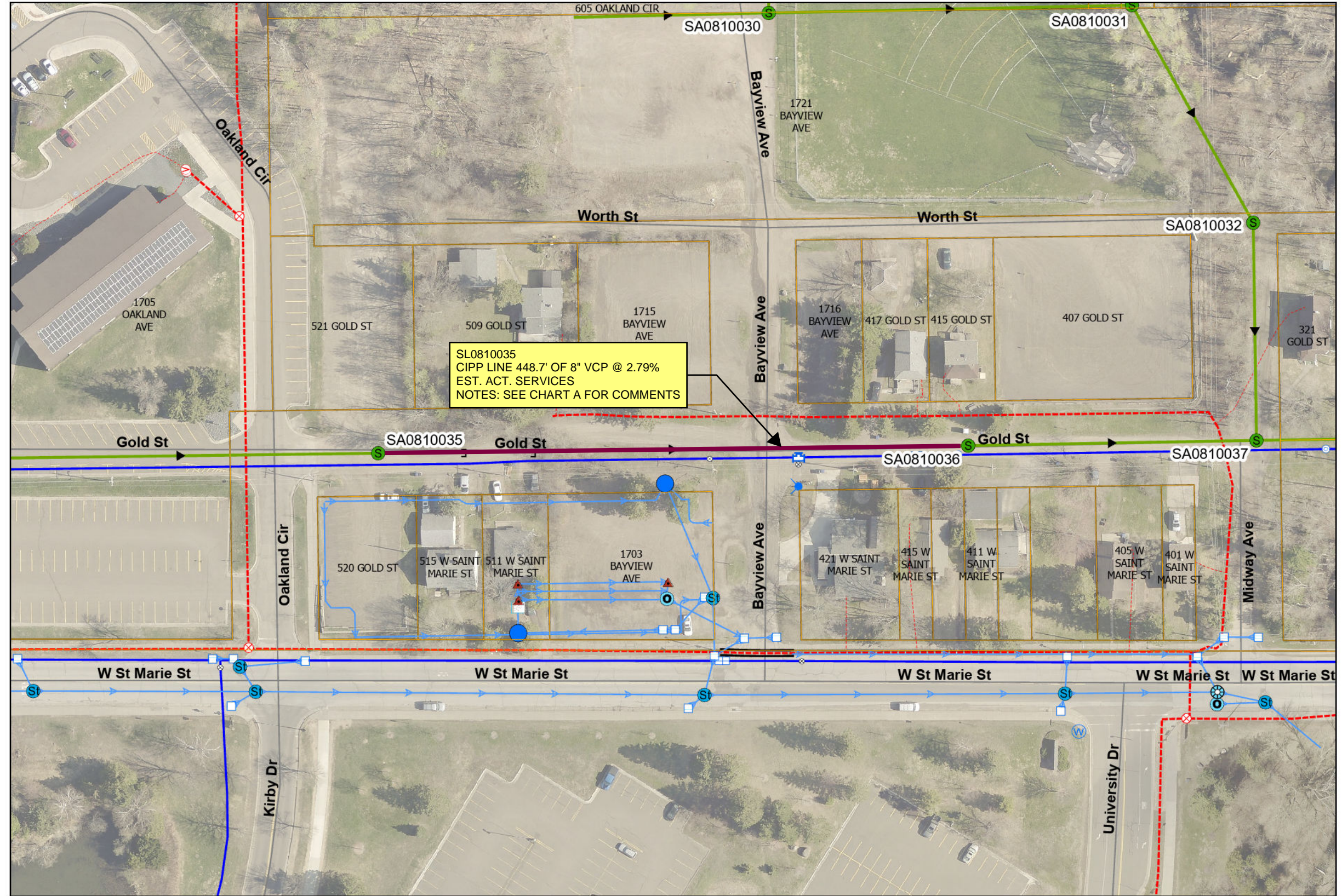
OVERVIEW MAP



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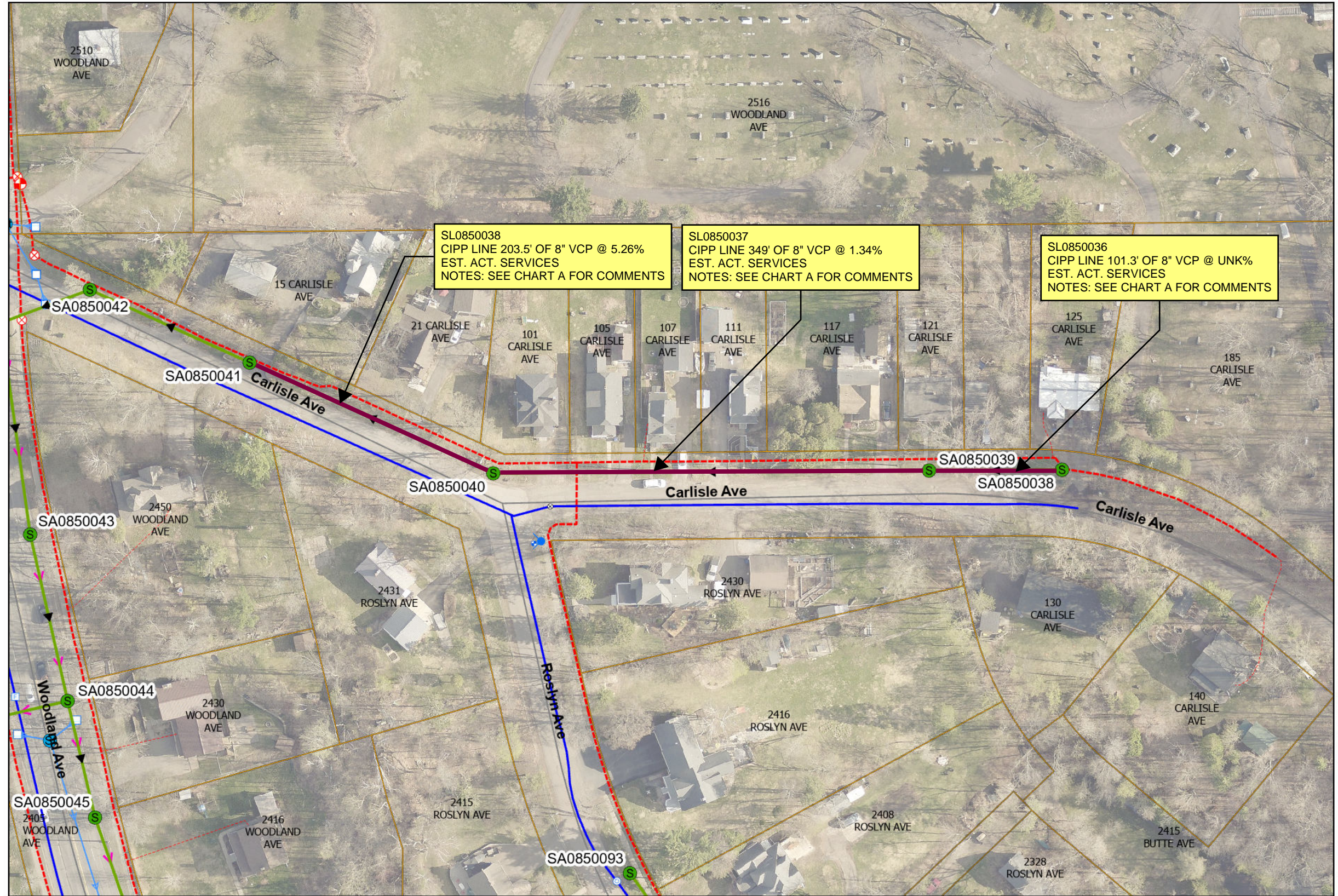
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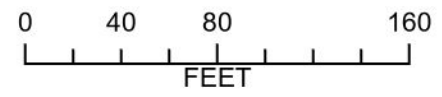
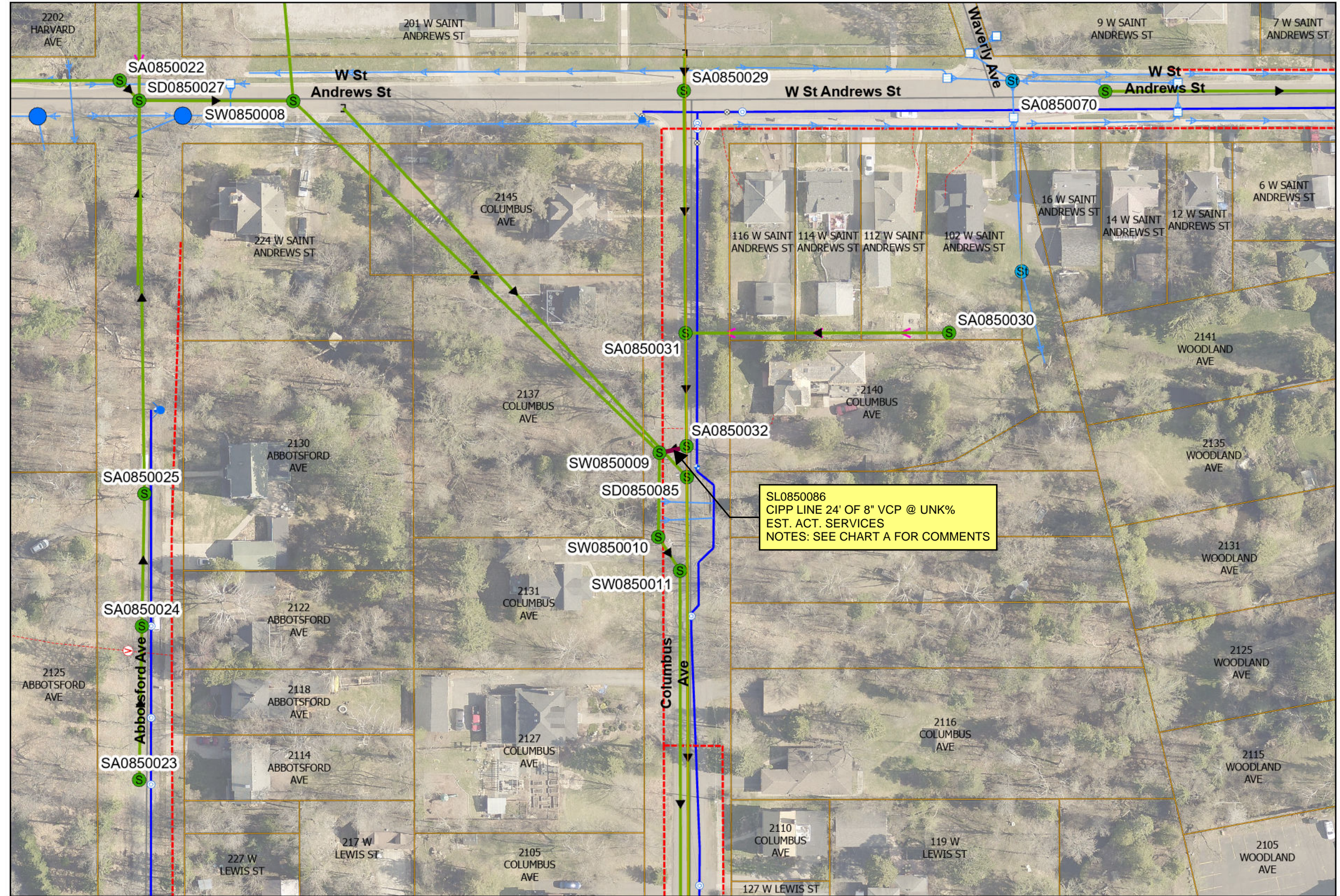
2026 CITYWIDE SANITARY SEWER CIPP LINING
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PAGE 15

OVERVIEW MAP



PLAN



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SL0850086
CIPP LINE 24' OF 8" VCP @ UNK%
EST. ACT. SERVICES
NOTES: SEE CHART A FOR COMMENTS

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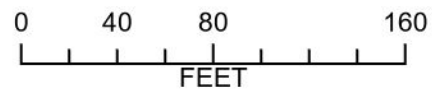


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PAGE 16

OVERVIEW MAP



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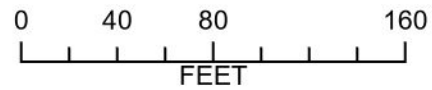
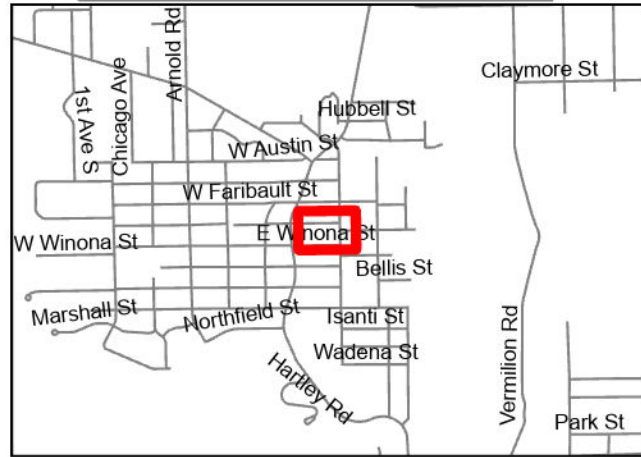


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OVERVIEW MAP

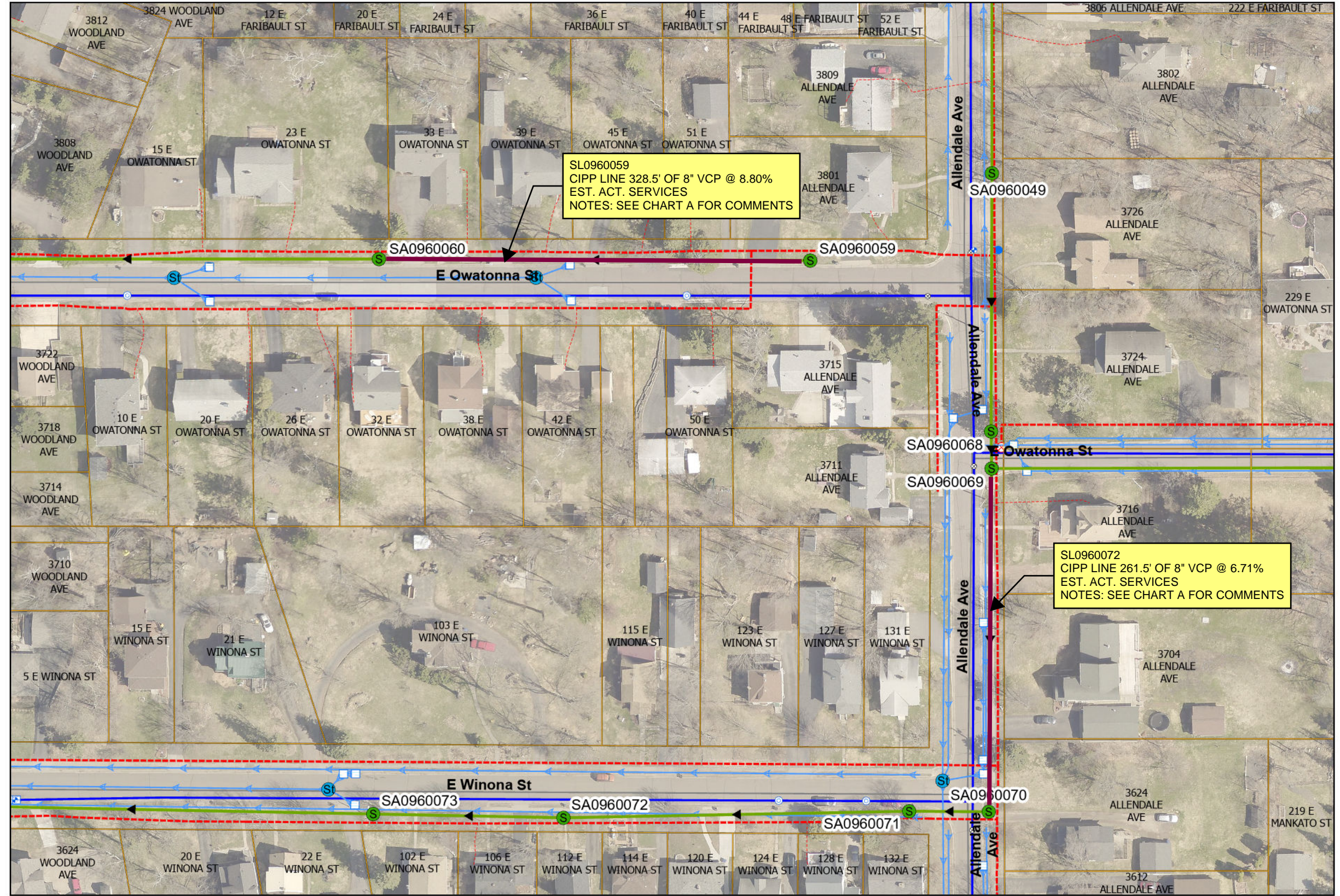


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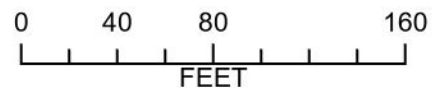


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PAGE 18

OVERVIEW MAP

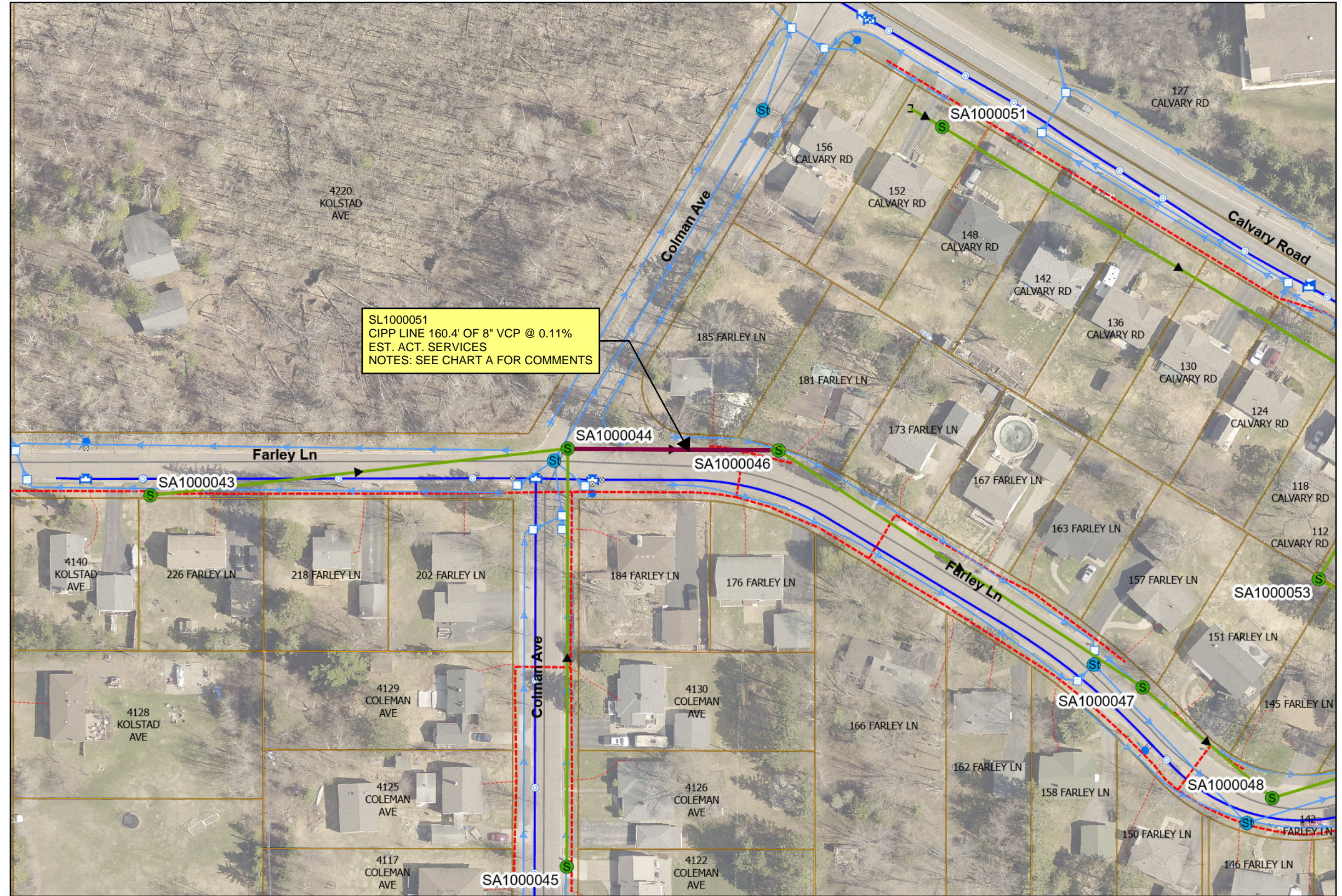


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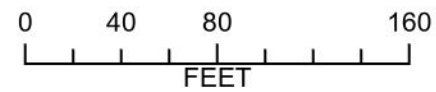
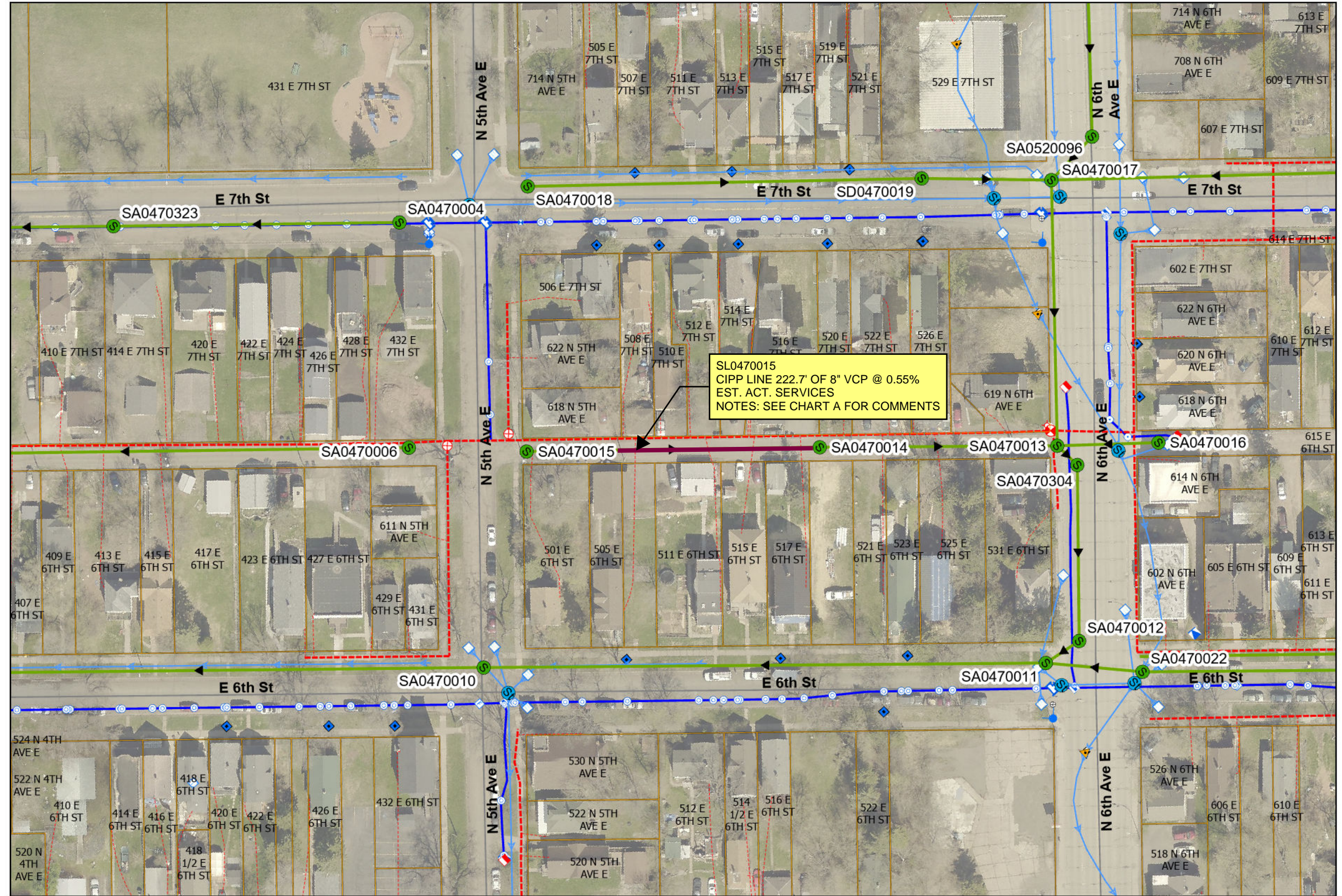
2026 CITYWIDE SANITARY SEWER CIPP LINING
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PAGE 19

OVERVIEW MAP



PLAN



LEGEND

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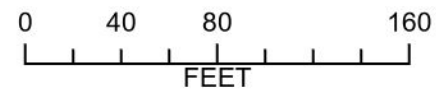
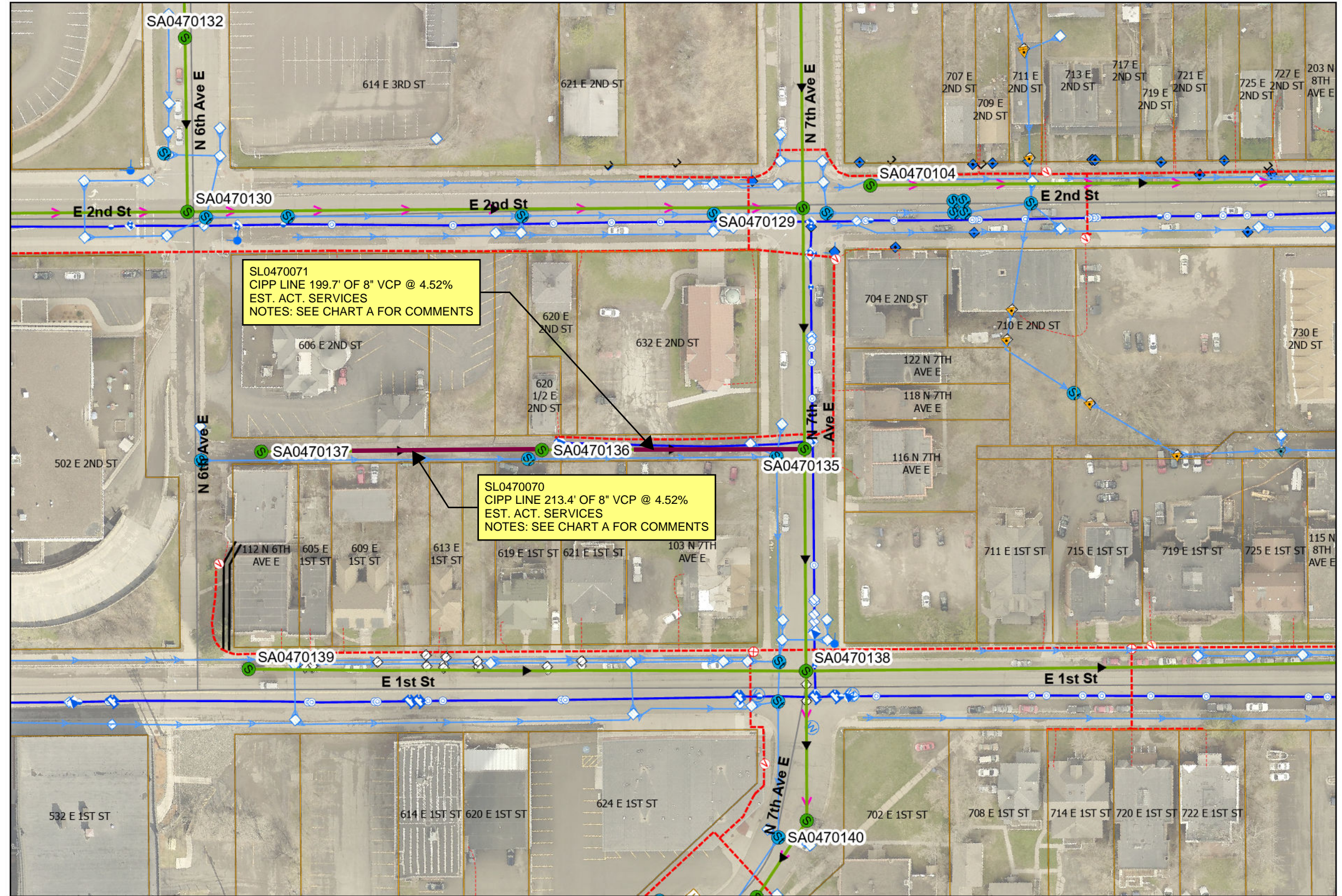
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OVERVIEW MAP



PLAN



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- WATER MAIN

REVISION 06/18/2026

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SIGNATURE: LIC. NO: 50401 DATE: 04/21/2026



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. RM. 240
DULUTH, MN 55802

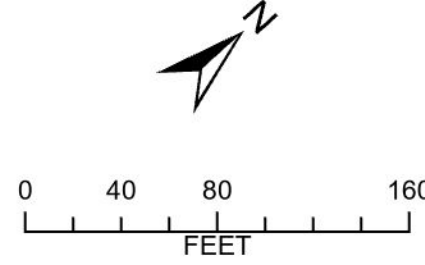
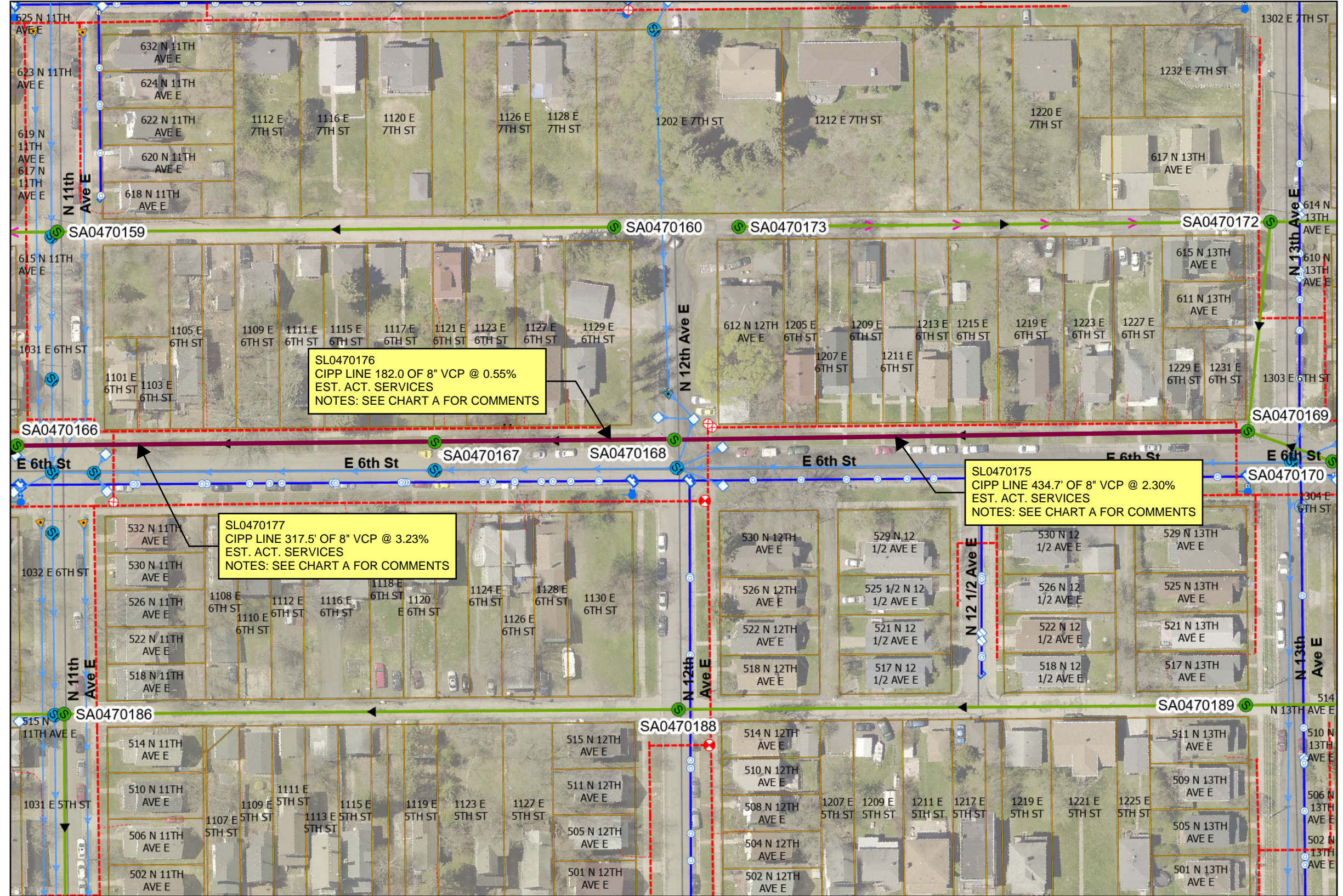
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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PAGE 21

OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- SANITARY MANHOLE
- STORM MANHOLE
- SANITARY MAIN
- STORM CATCH BASIN
- STORM MAIN
- - - GAS MAIN
- WATER MAIN

⚠ REVISION 06/18/2026

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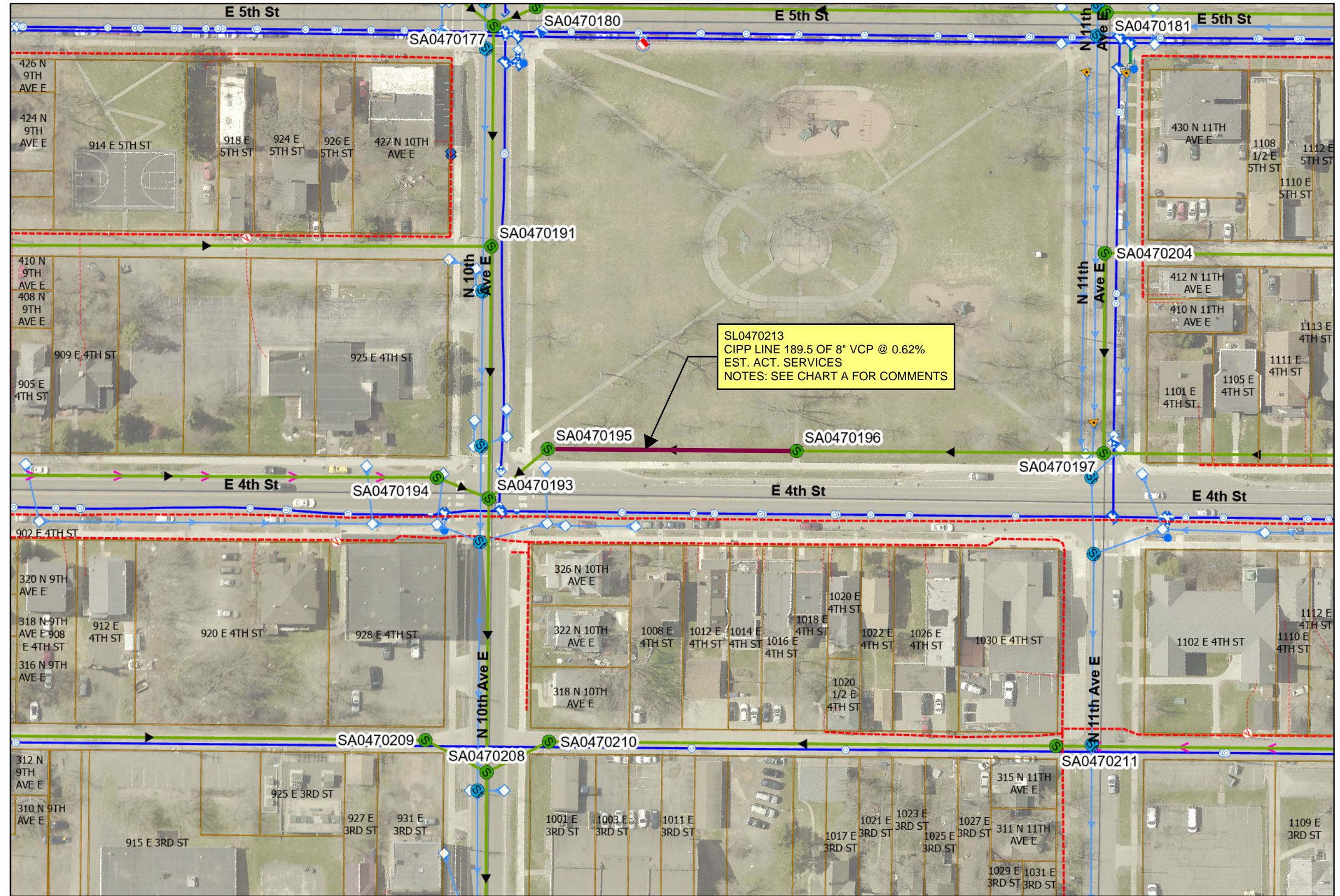
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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PAGE 22

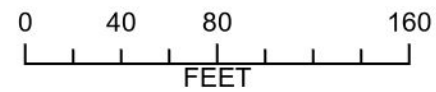
OVERVIEW MAP



PLAN



SL0470213
 CIPP LINE 189.5 OF 8" VCP @ 0.62%
 EST. ACT. SERVICES
 NOTES: SEE CHART A FOR COMMENTS



LEGEND

- Parcel W/Address
- SANITARY MANHOLE
- STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
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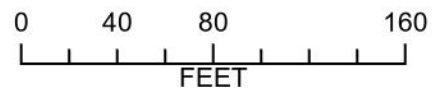


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 411 W. 1ST ST. RM. 240
 DULUTH, MN 55802

2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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OVERVIEW MAP

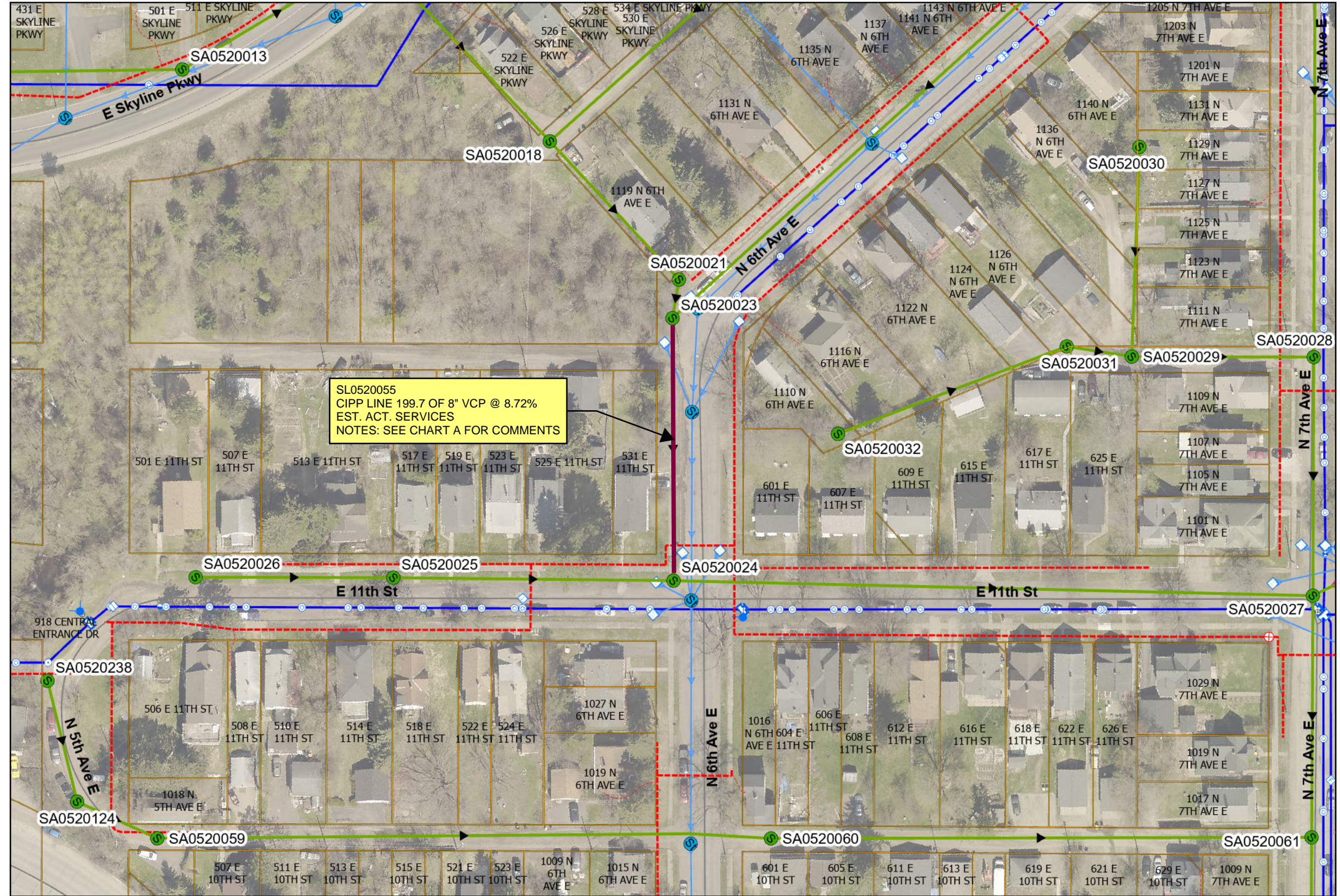


LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
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PLAN



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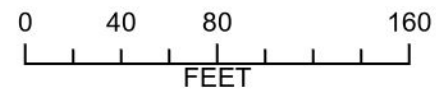
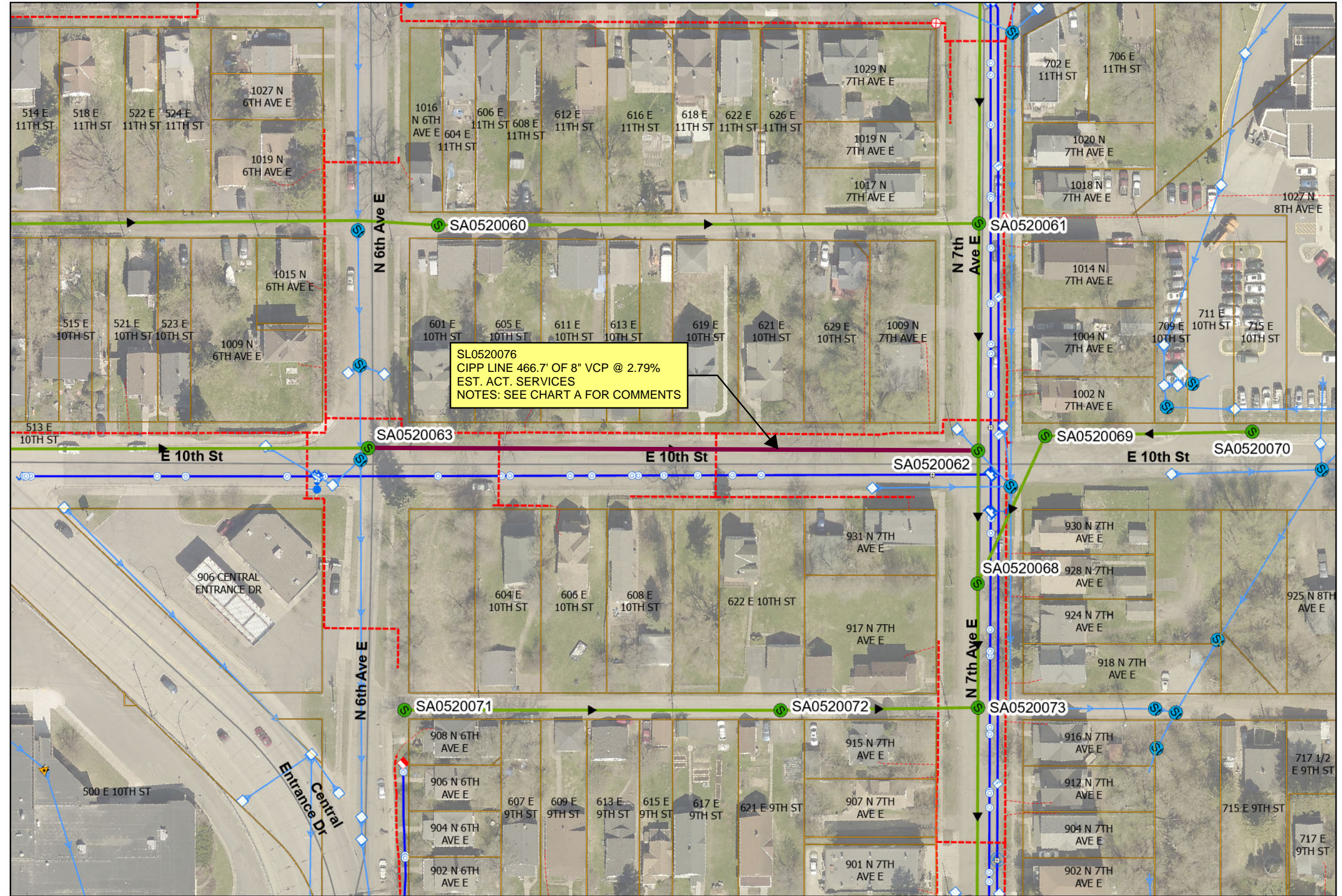
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

DRAWN BY: PMR
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OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- SANITARY MANHOLE
- STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
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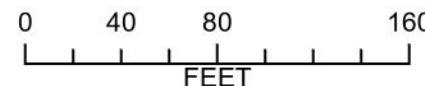
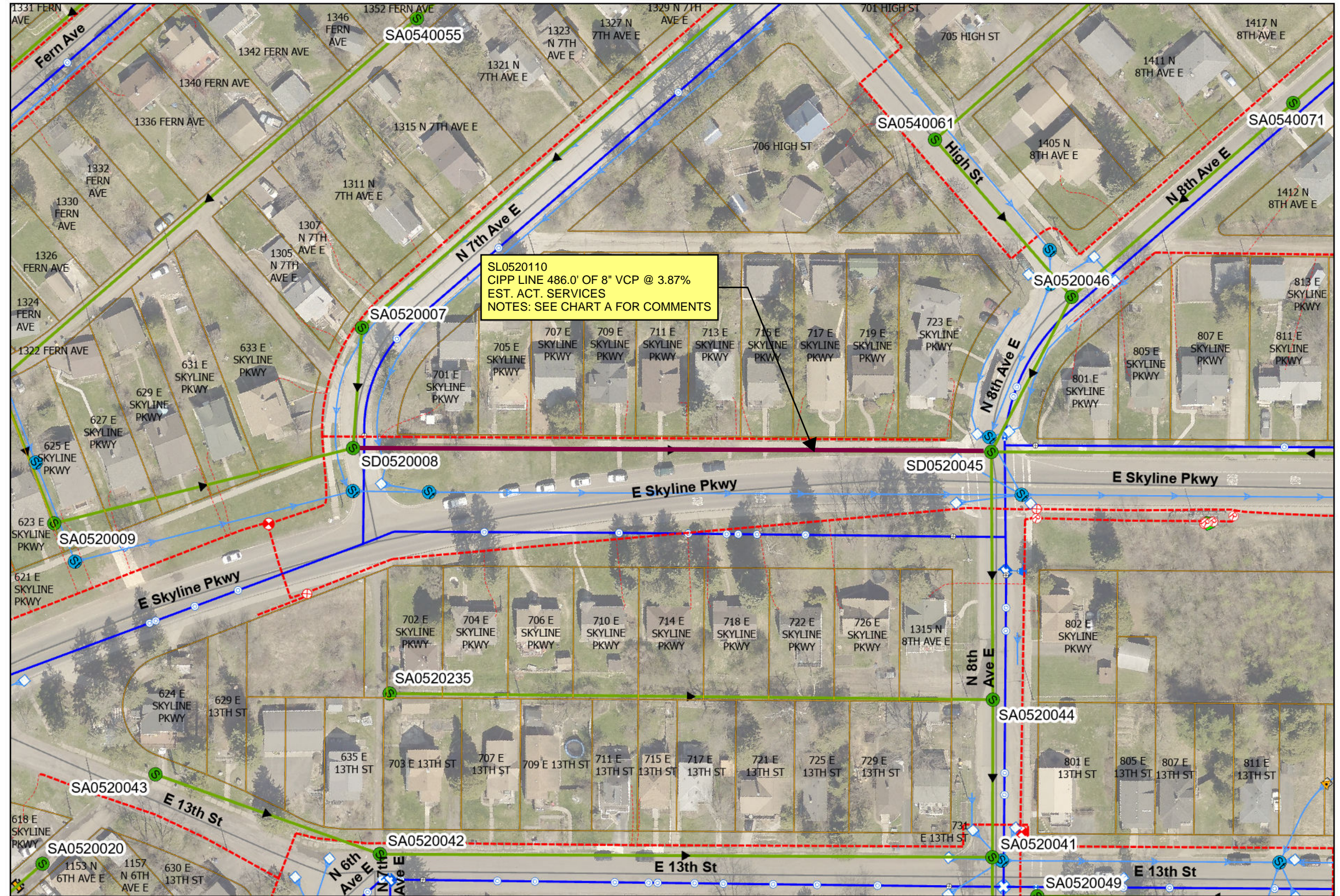
2026 CITYWIDE SANITARY SEWER CIPP LINING
 CITY PROJECT NO.: 2362

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OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
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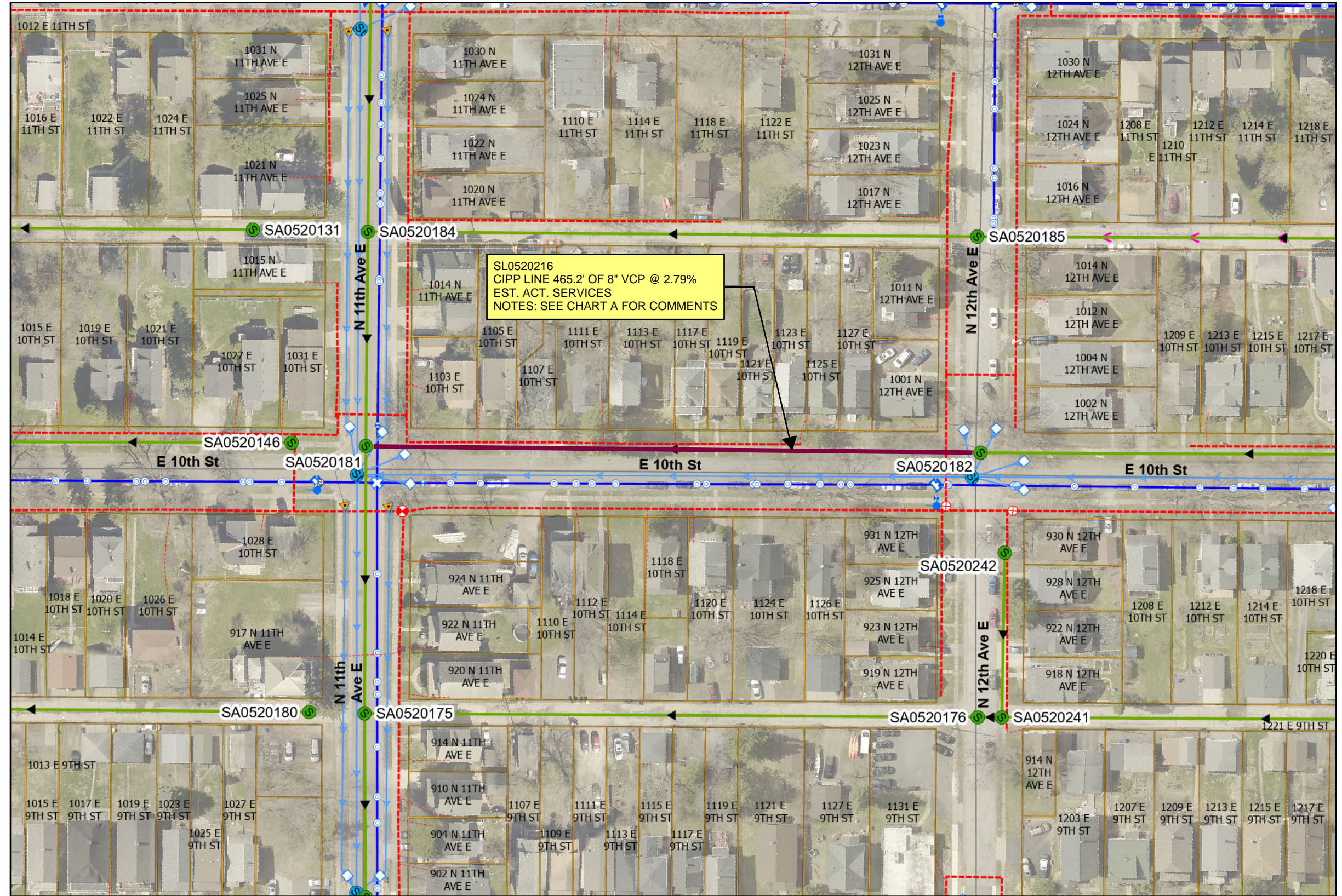
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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OVERVIEW MAP



PLAN



SL0520216
CIPP LINE 465.2' OF 8" VCP @ 2.79%
EST. ACT. SERVICES
NOTES: SEE CHART A FOR COMMENTS



LEGEND

- Parcel W/Address
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- ▶ SANITARY MAIN
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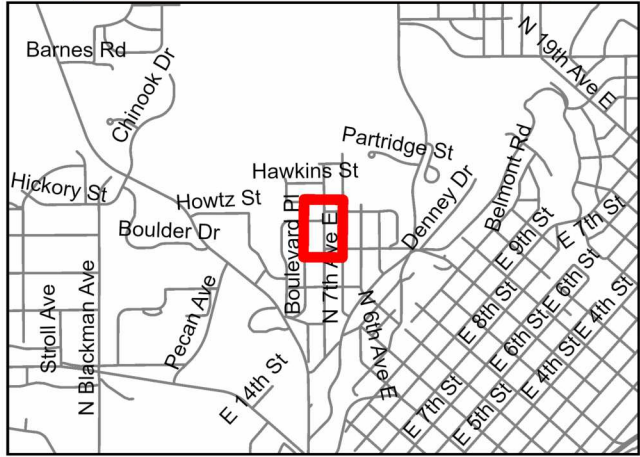


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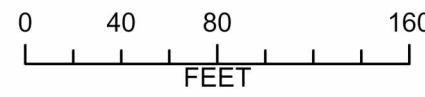
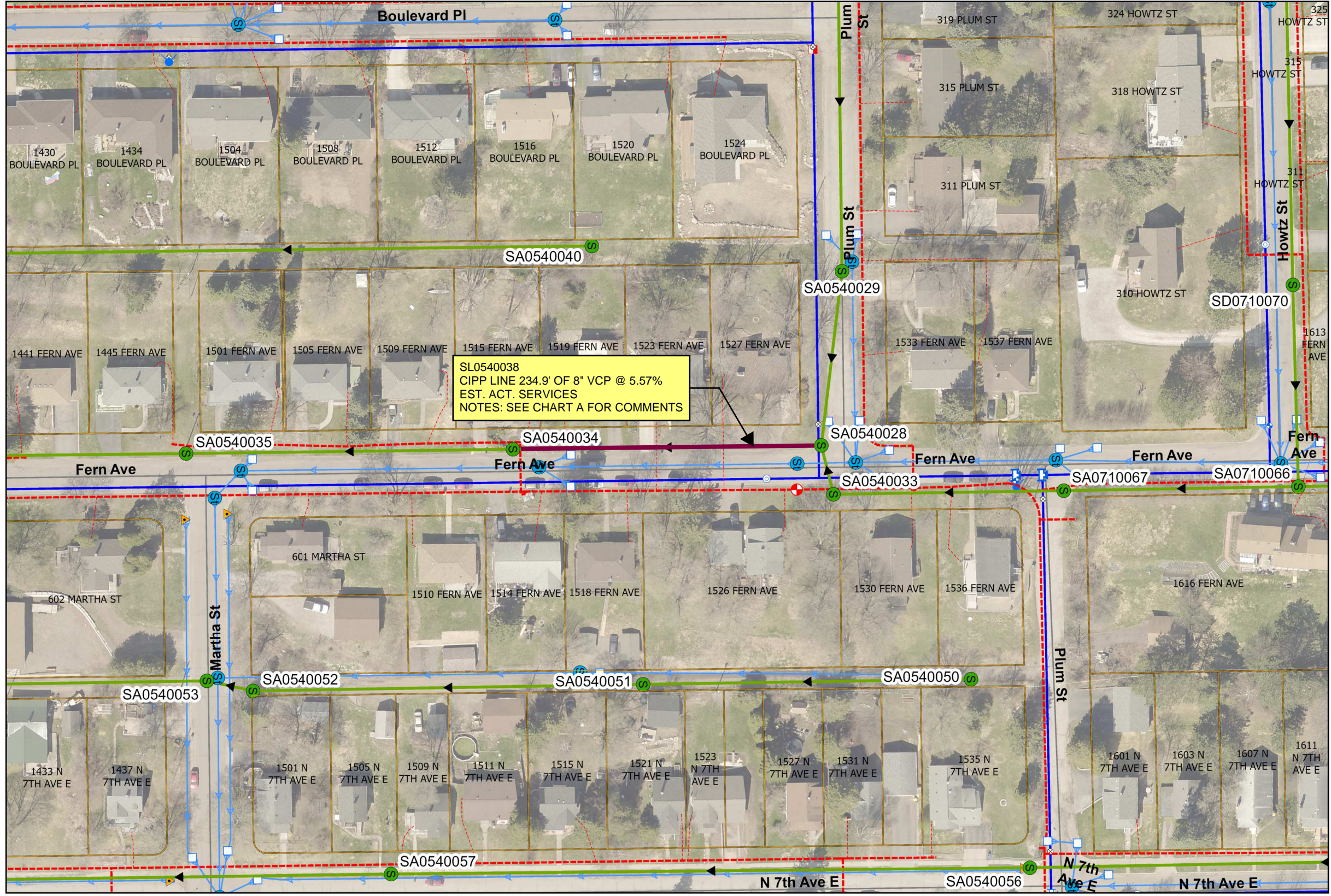
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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PAGE 27

OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
- - - GAS MAIN
- WATER MAIN

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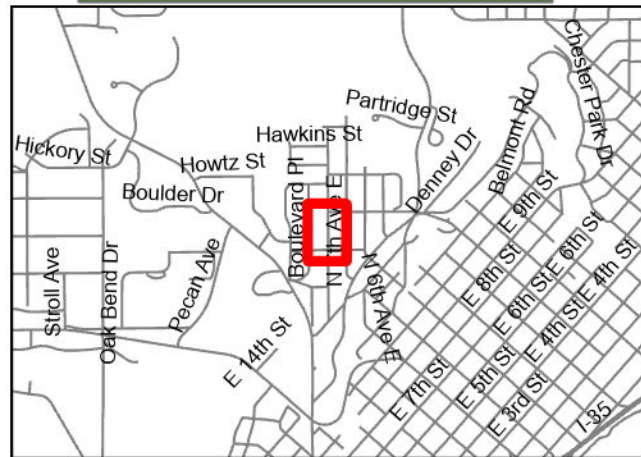


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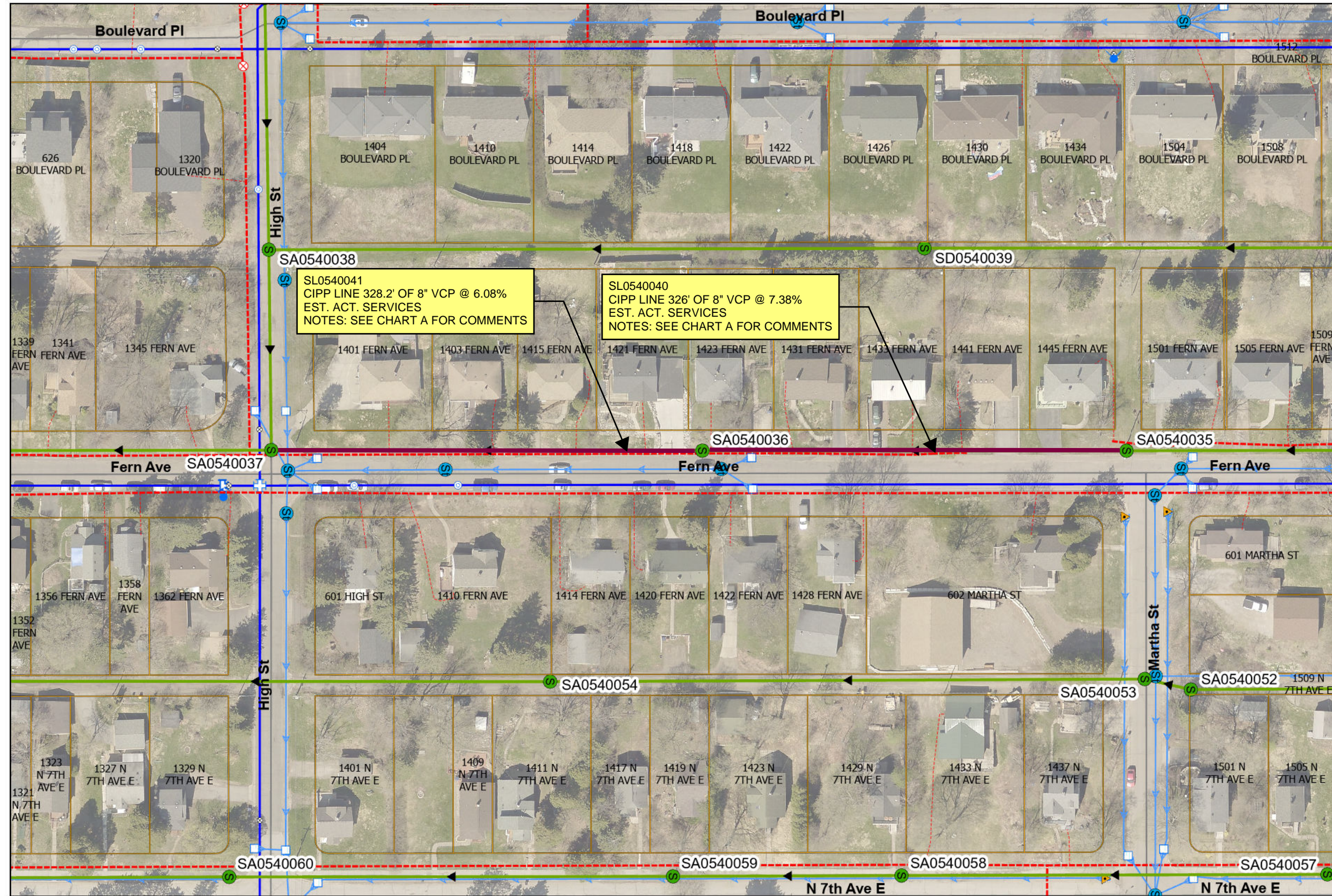
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

DRAWN BY: PMR
PAGE 28

OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- SANITARY MANHOLE
- STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
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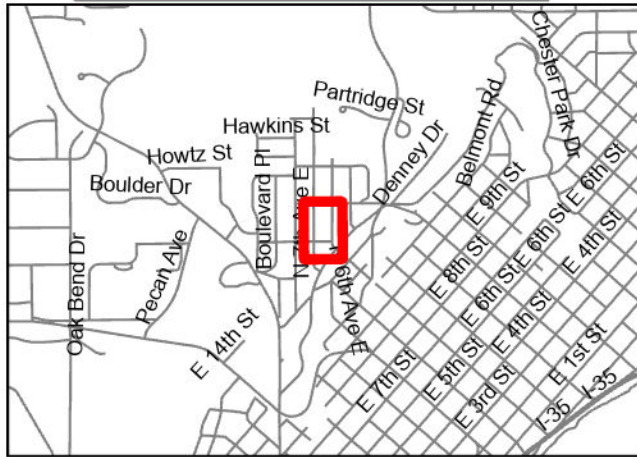


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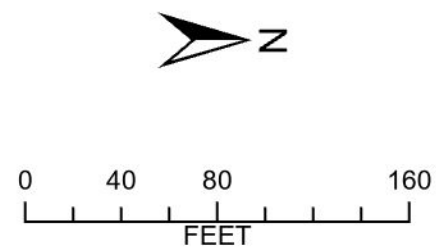
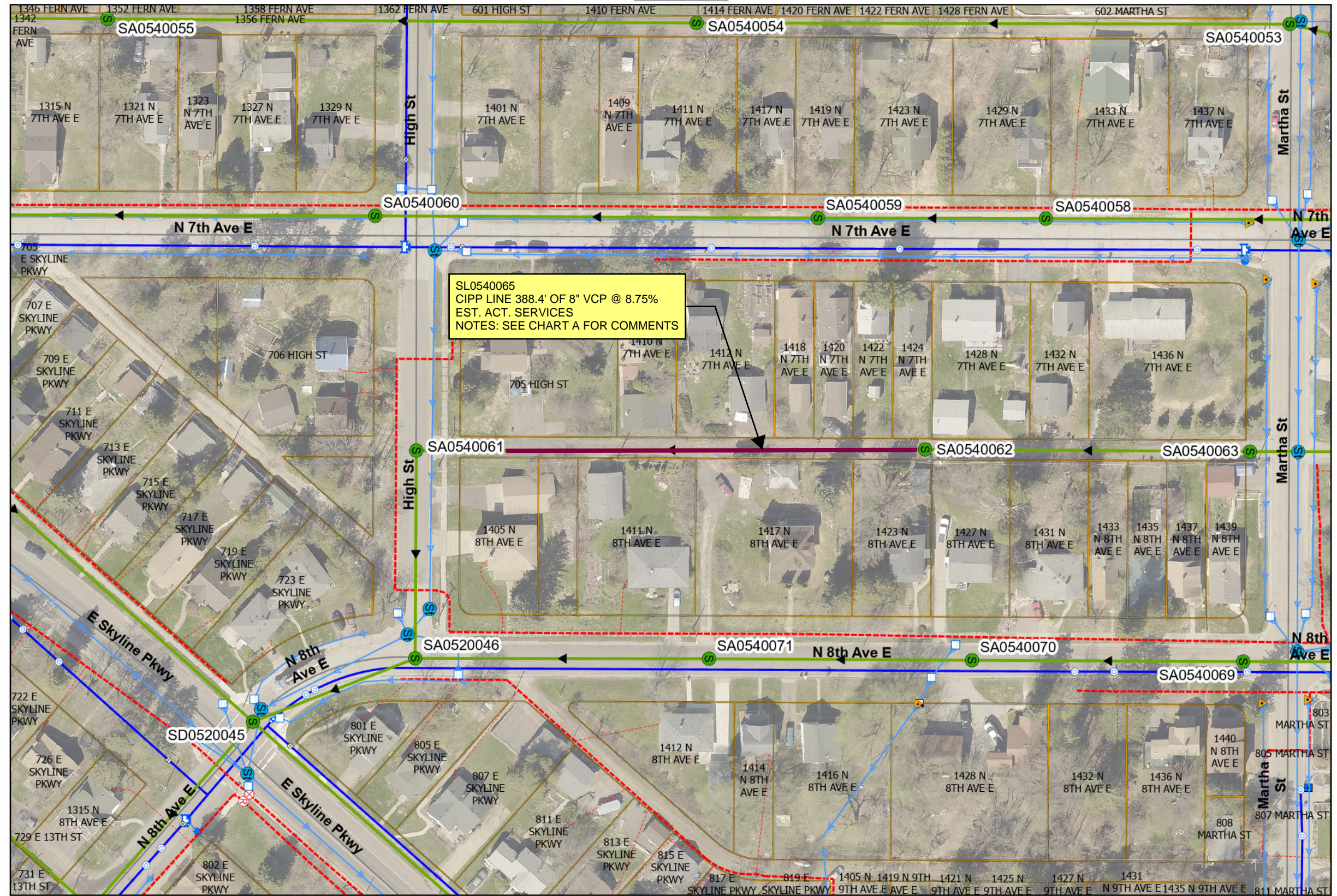
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

DRAWN BY: PMR
PAGE 29

OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
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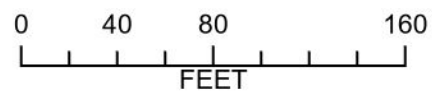


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2026 CITYWIDE SANITARY SEWER CIPP LINING
 CITY PROJECT NO.: 2362

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 PAGE 30

OVERVIEW MAP

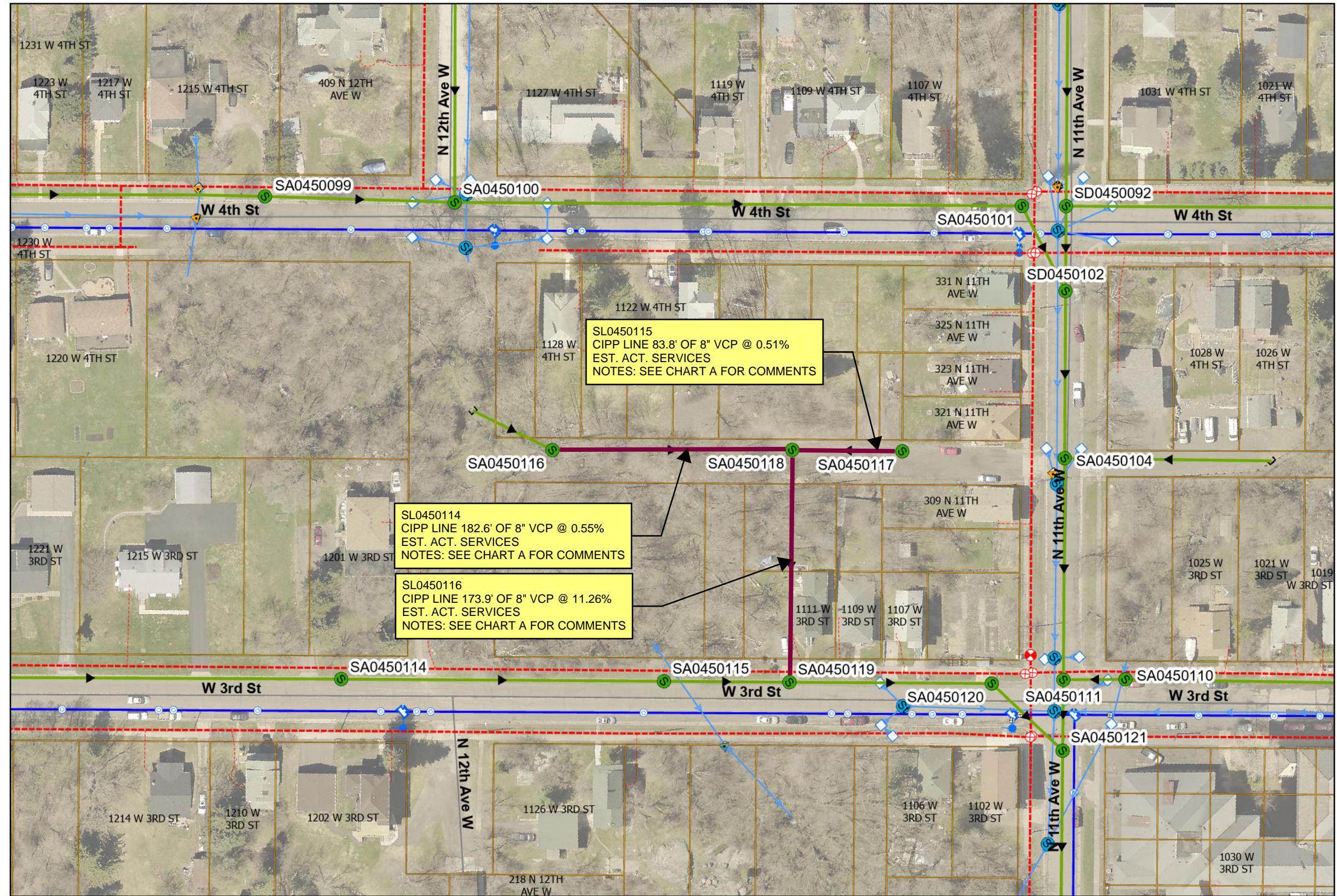


LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
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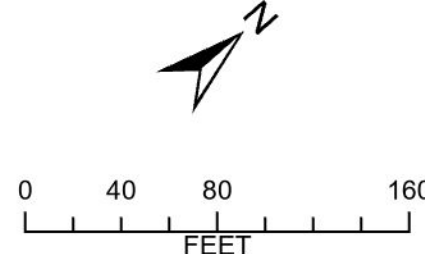
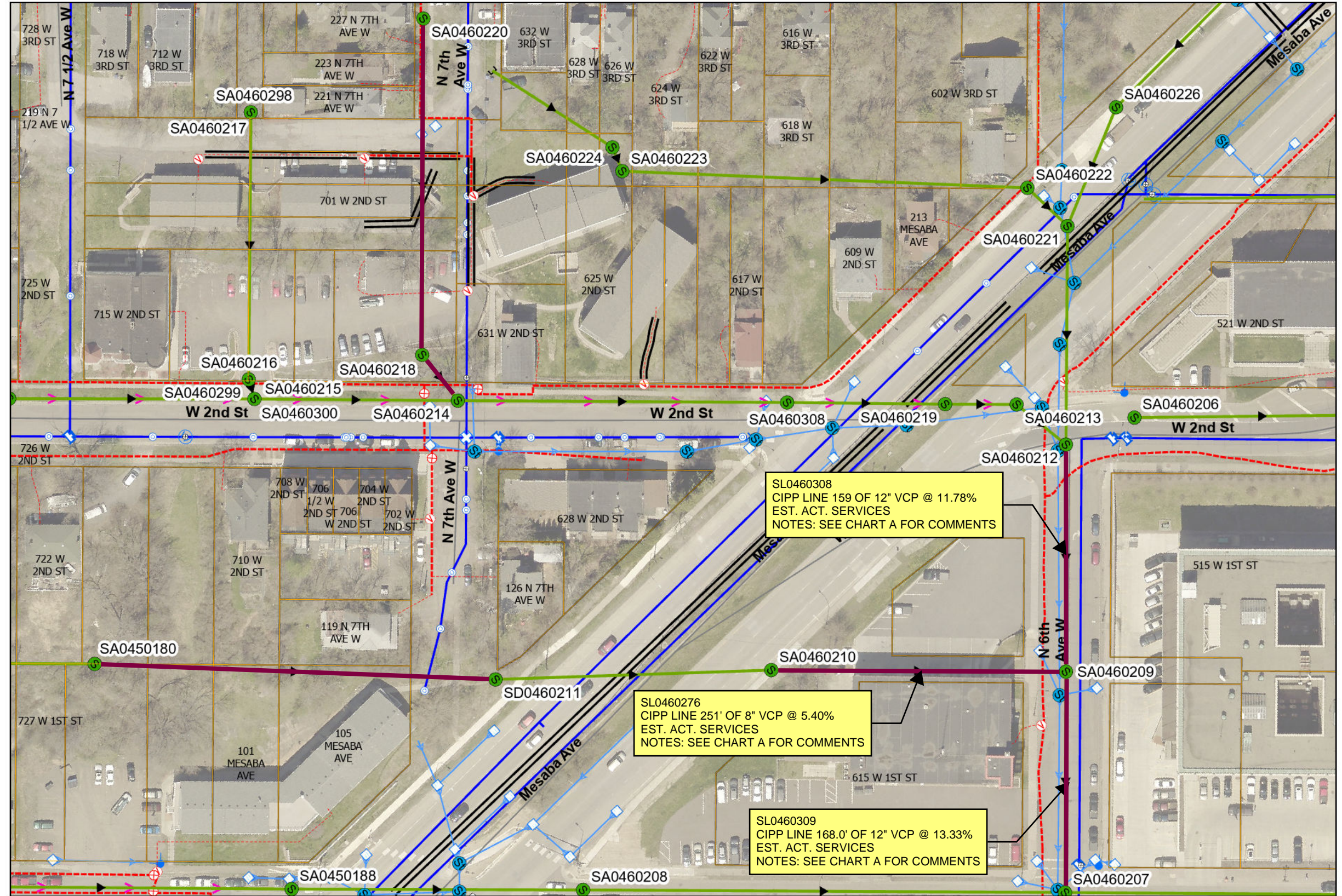
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- SANITARY MANHOLE
- STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
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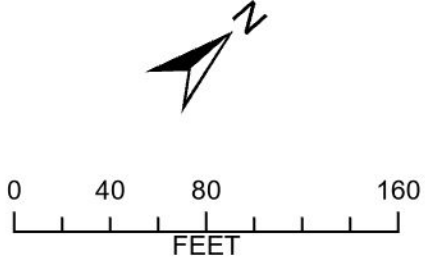
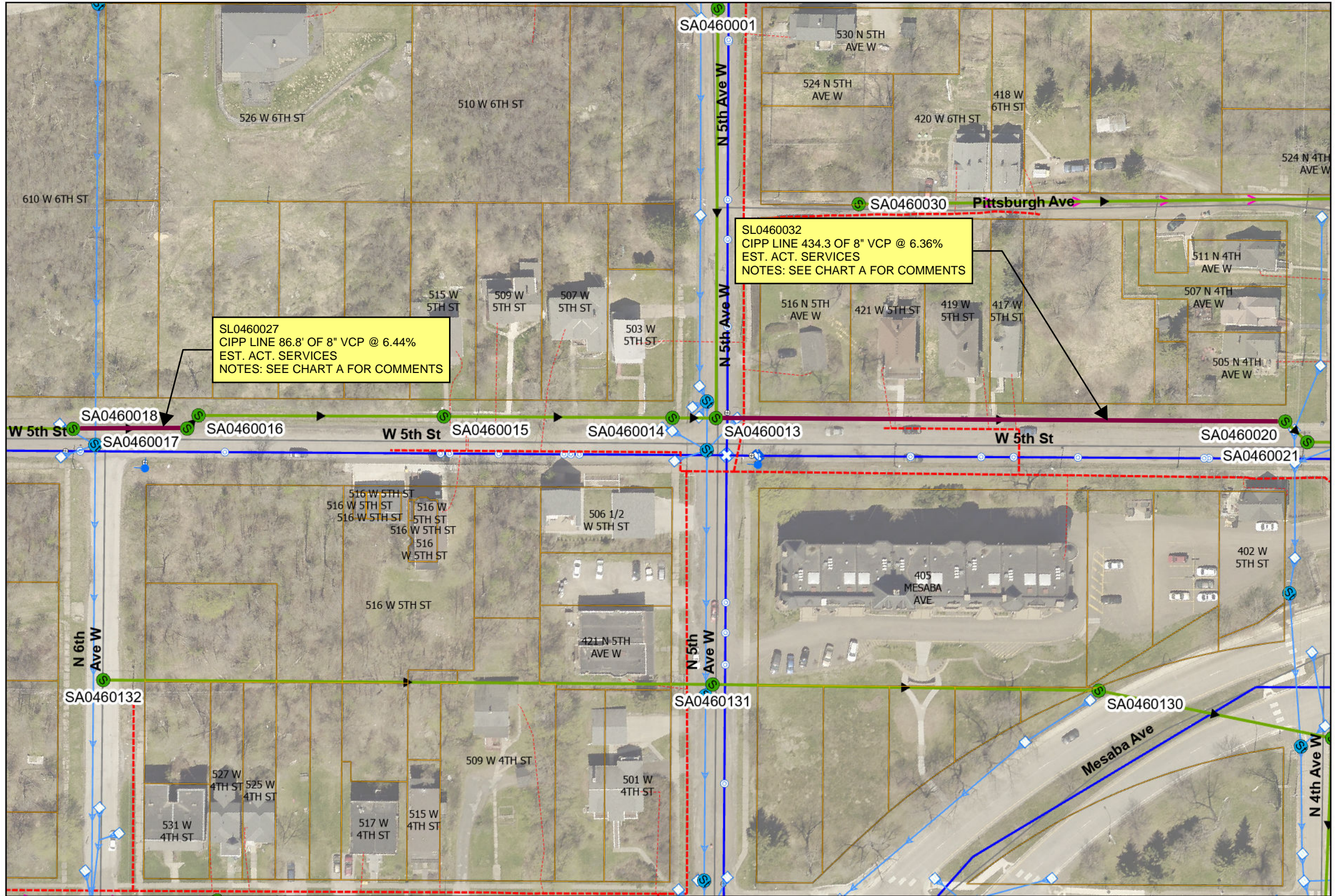
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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 PAGE 33

OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- SANITARY MANHOLE
- STORM MANHOLE
- SANITARY MAIN
- STORM CATCH BASIN
- STORM MAIN
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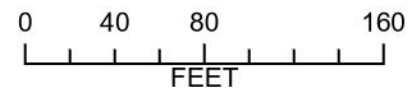
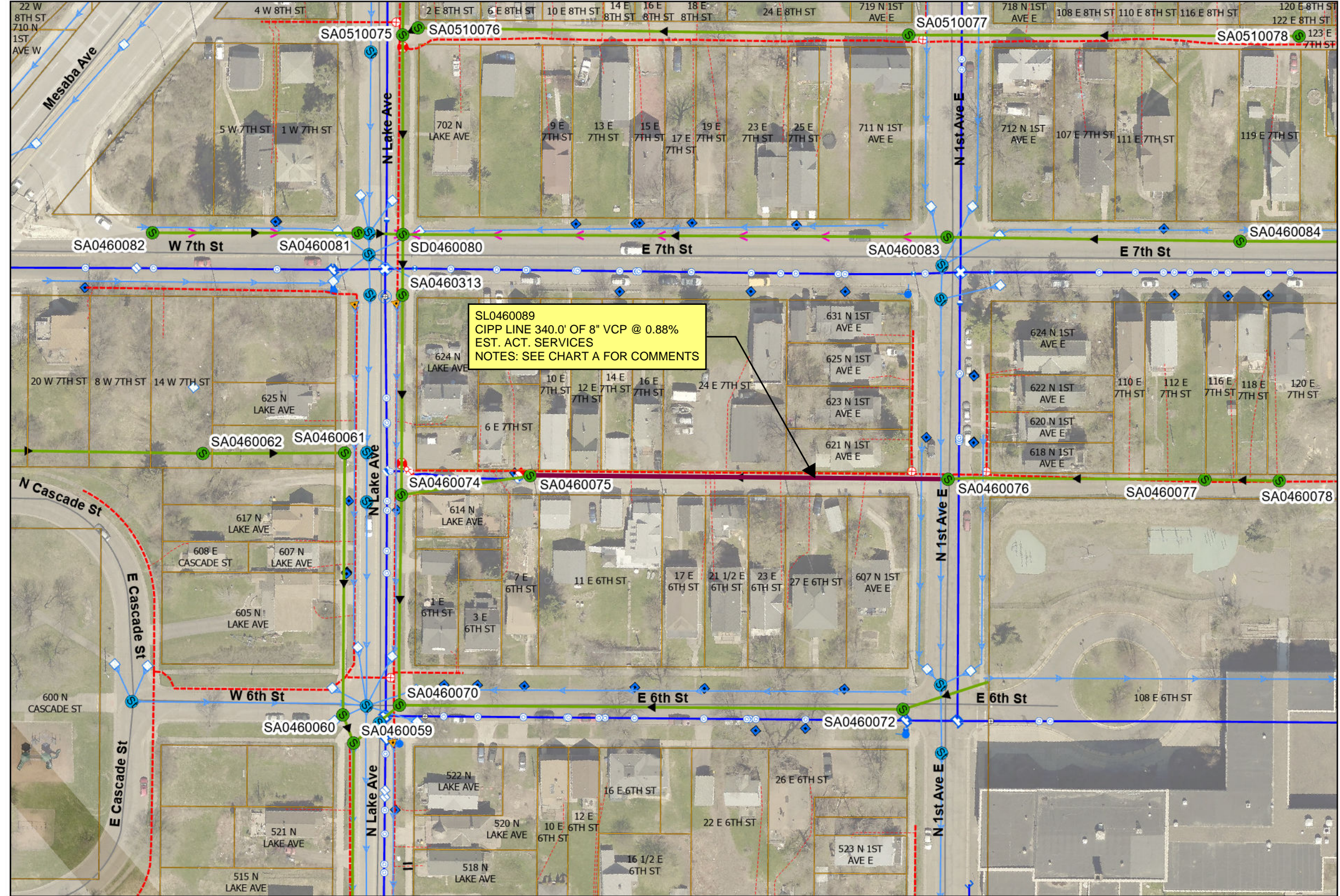
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
- ▶ STORM MAIN
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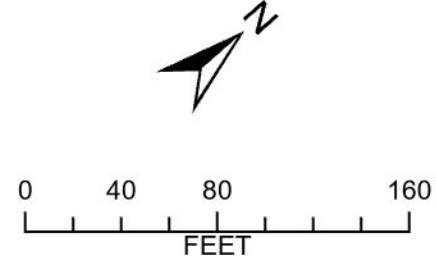
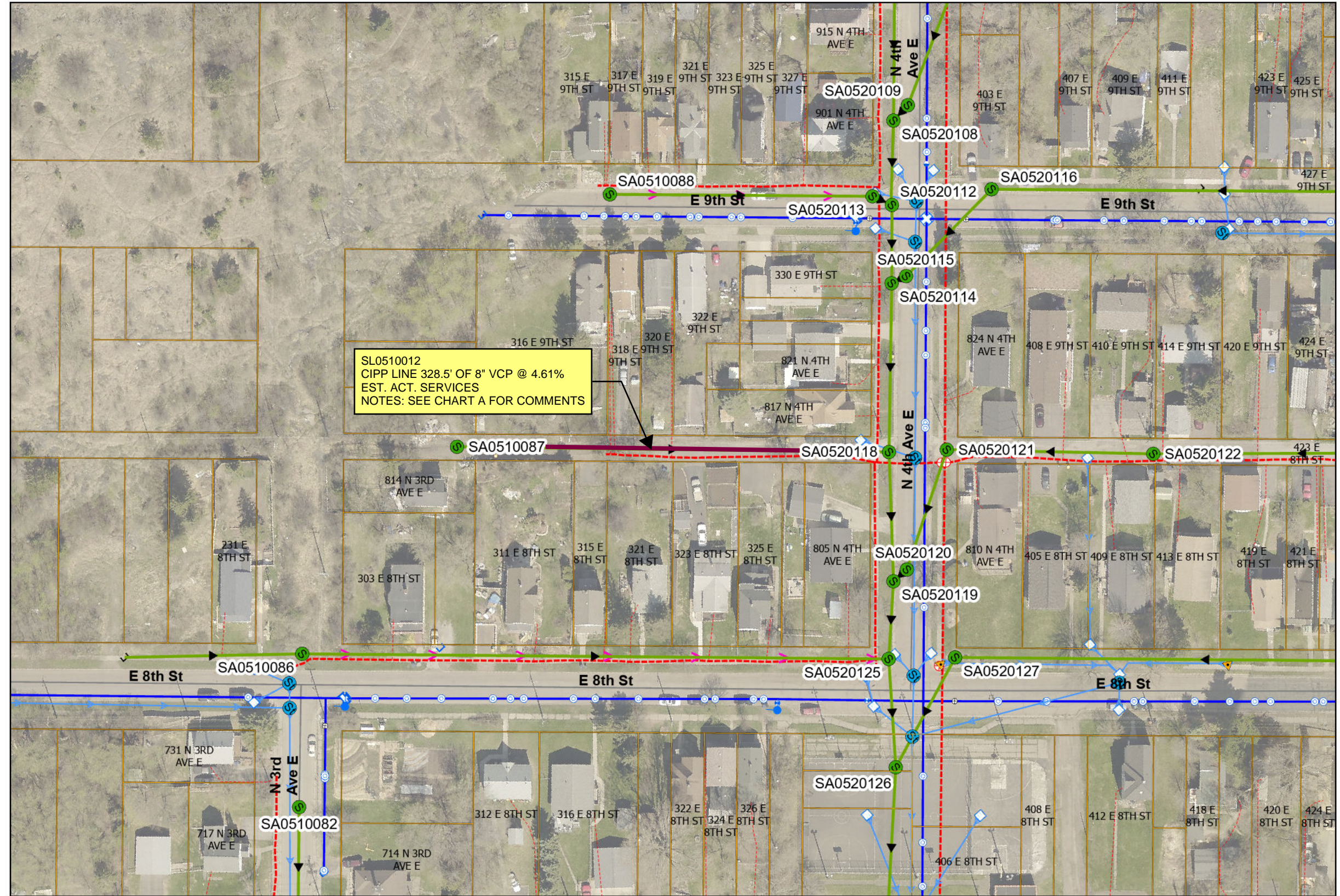
2026 CITYWIDE SANITARY SEWER CIPP LINING
CITY PROJECT NO.: 2362

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OVERVIEW MAP



PLAN



LEGEND	
	Parcel W/Address
	SANITARY MANHOLE
	STORM MANHOLE
	SANITARY MAIN
	STORM CATCH BASIN
	STORM MAIN
	GAS MAIN
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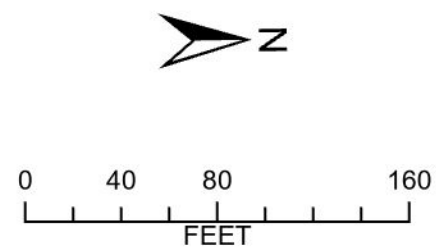
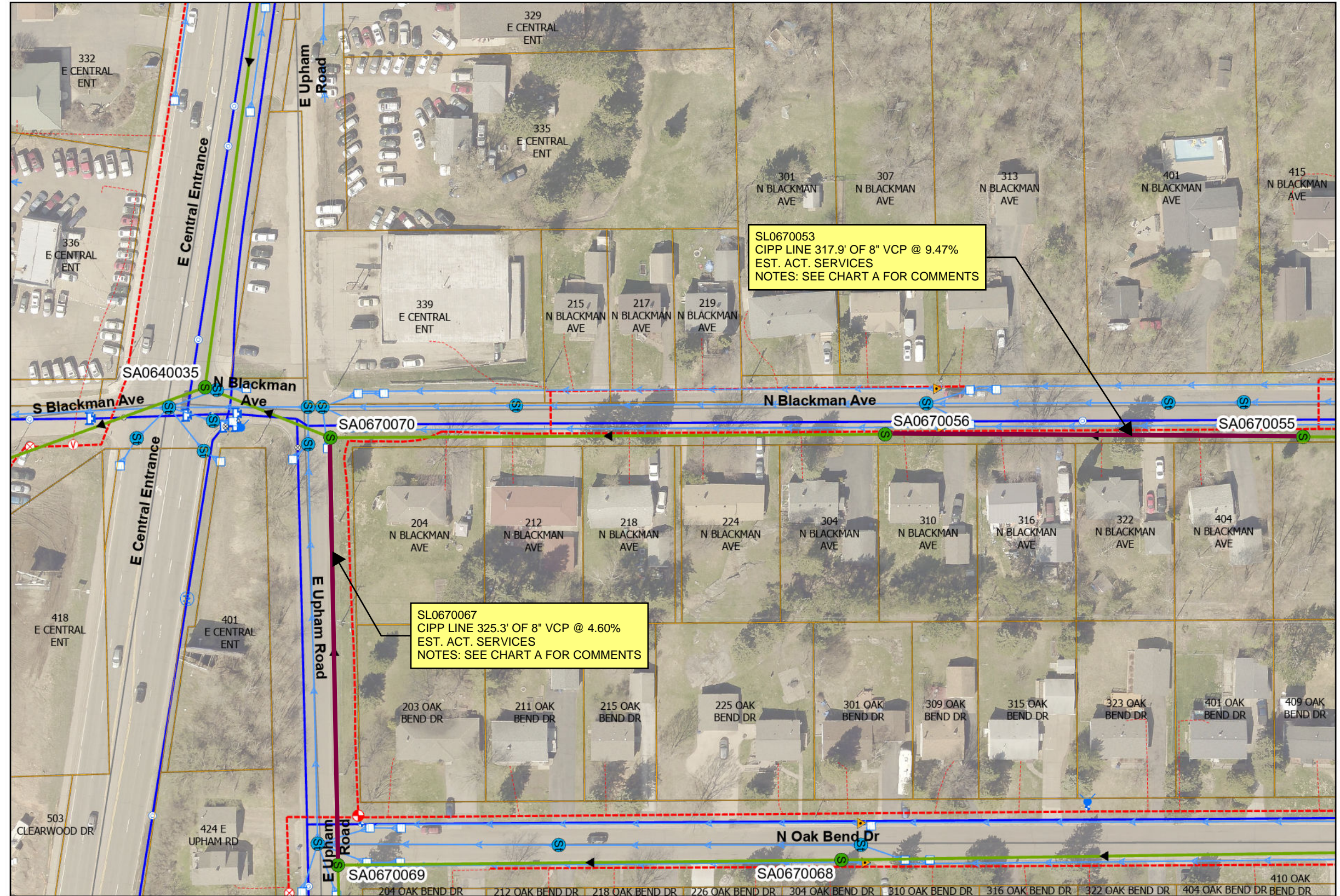
2026 CITYWIDE SANITARY SEWER CIPP LINING
 CITY PROJECT NO.: 2362

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OVERVIEW MAP



PLAN



LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
- S STORM MANHOLE
- ▶ SANITARY MAIN
- STORM CATCH BASIN
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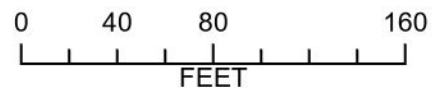


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OVERVIEW MAP

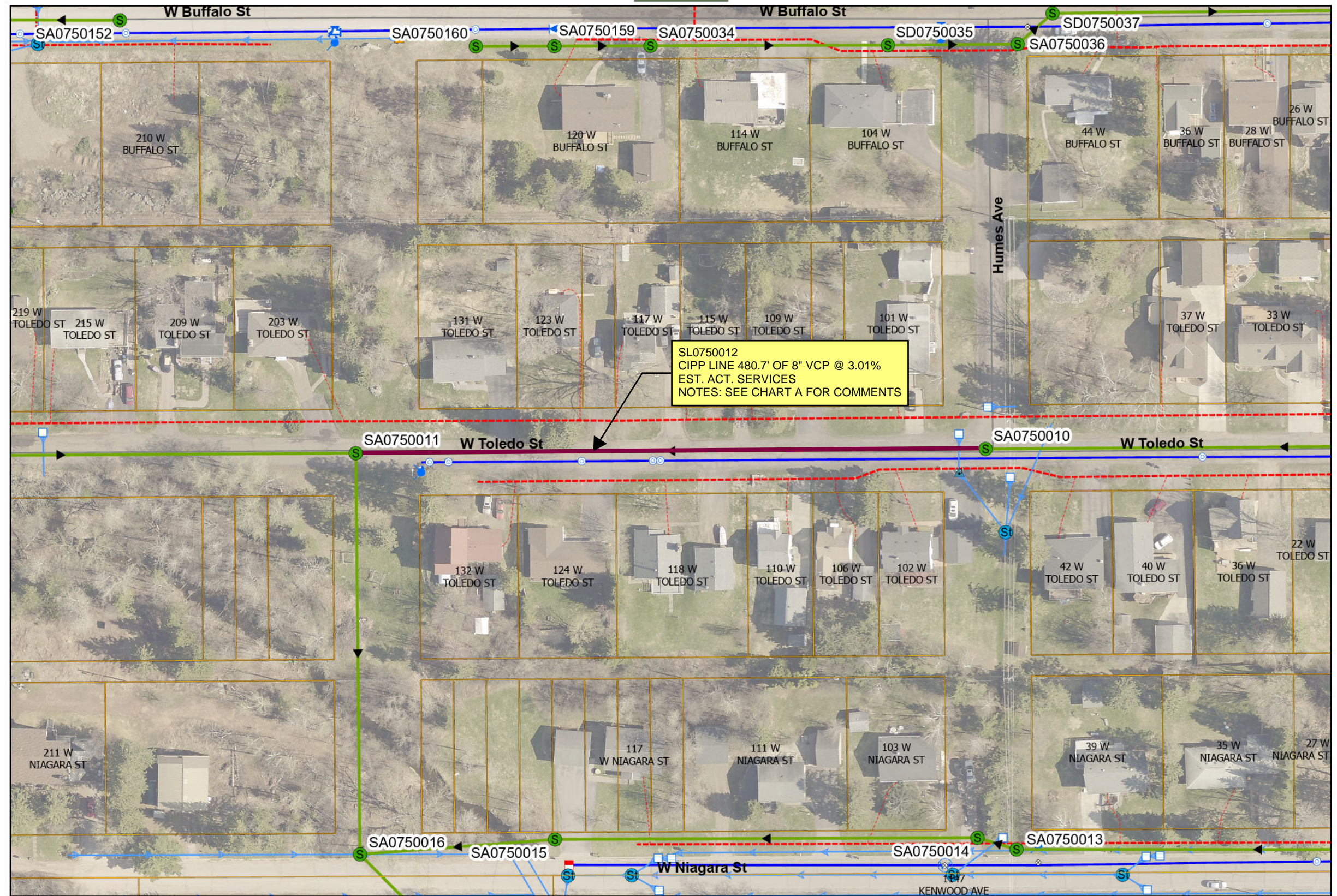


LEGEND

- Parcel W/Address
- S SANITARY MANHOLE
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